MUSIC IN THE AIR

SINGING CIRRUS PILOT / **P.66**

ARKANSAS ADVENTURE

FLYING WITH THE BYRDS / **P.74**

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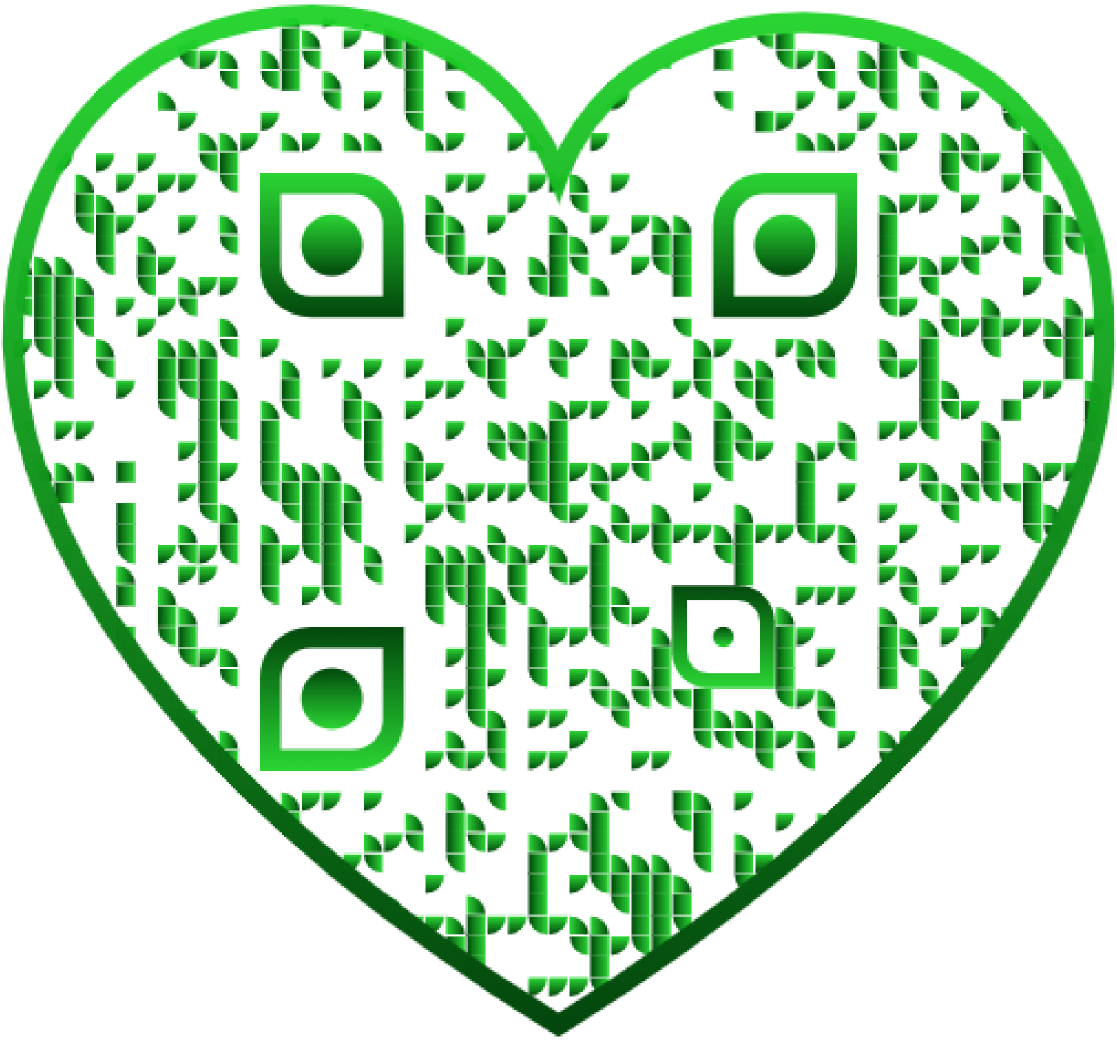

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FEATURES

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October 2025

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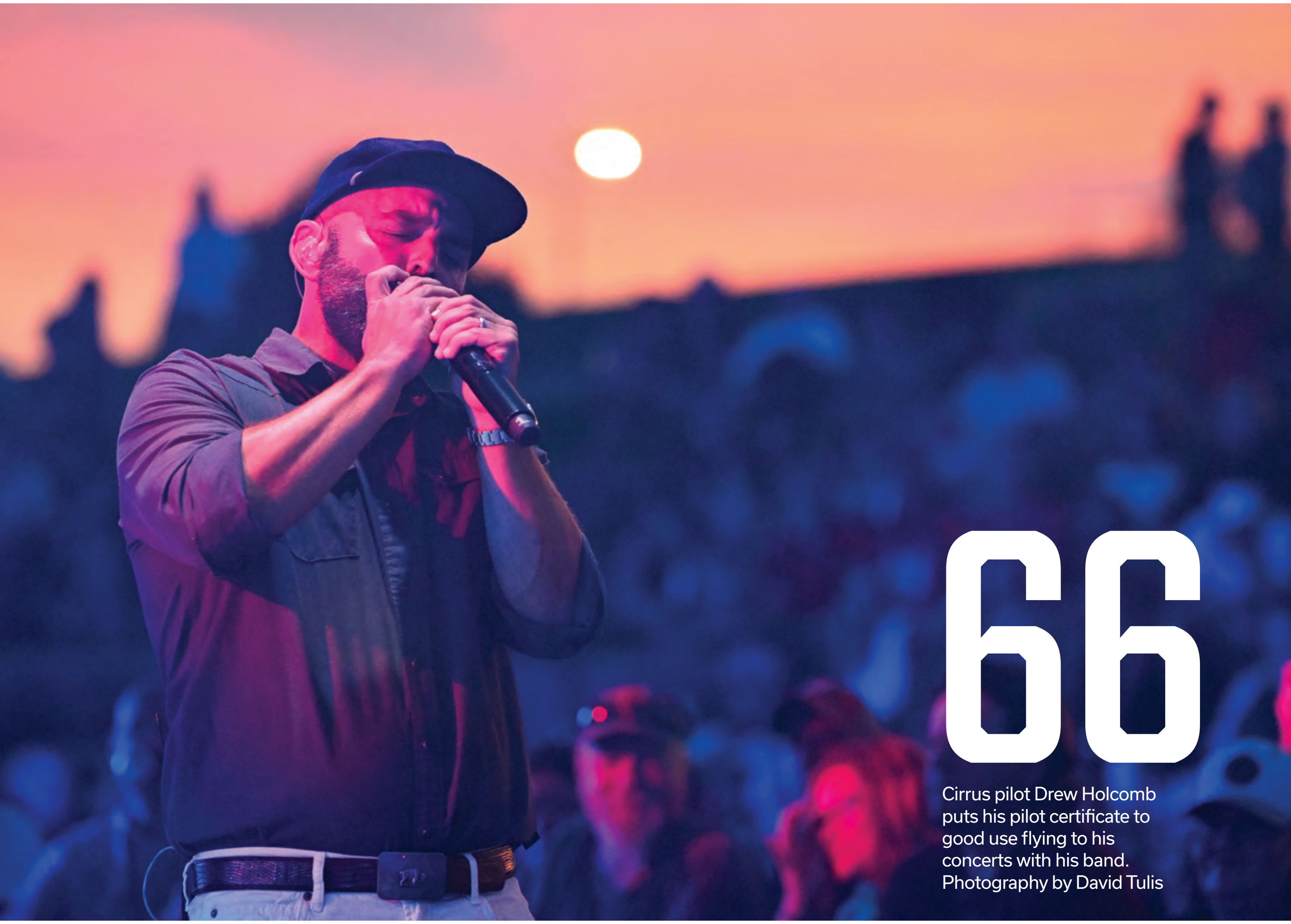

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Cirrus pilot Drew Holcomb puts his pilot certificate to good use flying to his concerts with his band. Photography by David Tulis

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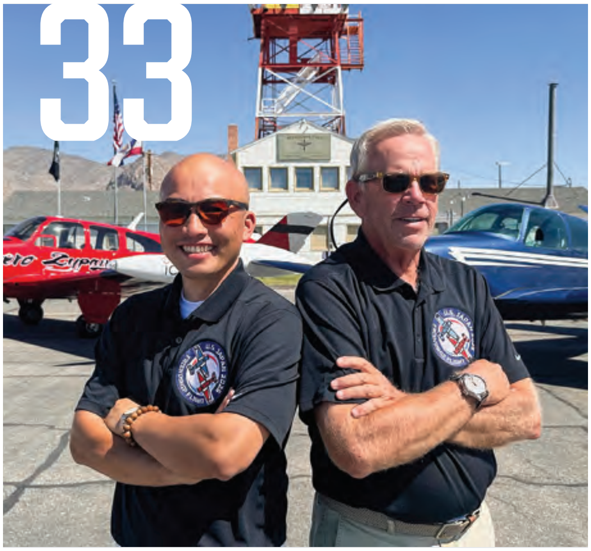

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MUSIC IN THE AIR
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SUPER SPEEDY

SUPER SPEEDY

Fly Risen has demonstrated the SuperVeloce's speed and efficiency through record-setting flights, as Dave Hirschman reports in "It's All About Speed," which begins on p. 58.

Photography by Chris Rose

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Mind-blowing

The things we do for you

BY DARREN PLEASANCE / President and CEO

EVEN THOUGH I'VE been a member of AOPA for more than 30 years, it was not until I embarked on this mission as your president that I truly realized how much AOPA has to offer its members. In fact, in my early days as your president, I spent many of them saying "We have that?" And by *that* I mean the products, services, resources, expert advice, and more that are a part of your membership dues. It has blown my mind.

The first resource that I cannot emphasize enough is AOPA's Pilot Protection Services. PPS is like having your own personal attorney and medical certification advisor at your beck and call for any aviation issue to come your way. Like it or not, each of us may face a situation that could put us on the wrong side of the FAA, whether we did something we meant to or not. I asked AOPA legal counsel Jared Allen and his team of attorneys what the most common violations are that members call for help. He polled his team and told me that a TFR/restricted airspace bust is the most common violation; followed by inadvertent entry into Class B, C, D airspace; and then intentional airport entry but with failure to establish communications. All easy "whoops" that we can imagine and fear happening to us. When that call from the FAA comes, do you know that AOPA can often mitigate the possible consequences simply by being in your court? In addition to the AOPA staff attorneys who are only a phone call/email away, we also have a nationwide network of panel attorneys who can help you in whatever state you are in—emotionally or physically. And, we have a team of medical specialists who will provide confidential advice. We can help maximize the chance you'll get to keep your medical and keep on flying legally. Don't face the angst that comes with a call from the FAA when your membership puts highly regarded and expert counsel on your side.

EAA AirVenture is behind us, but I am still amazed at the breadth of questions posed to me there. On the flight line or in our AOPA tent, I was asked repeatedly about getting help. Help with aviation career opportunities, help with medical issues, help with maintenance questions, help with aircraft purchases/sales, help with certificate issues and more. Again, I turned to AOPA's staff and asked how we can help, and I was inspired by the insight our team delivered. The AOPA Pilot Information Center is staffed by aviation professionals who—with most of them being very long-term employees—can answer and have answered the myriad issues that pilots face. There's Carlo Cilliers, the award-winning aircraft builder whom many have called the "airplane whisperer." He can and has answered virtually every maintenance question on Earth. I challenge you to stump him. Then there's Rodney Martz, our 30-plus-year expert on hangar issues, aircraft purchases, and so much more. Ask 25-year-plus senior technician Craig Brown about certificate issues. Ask 30-year-plus medical certification director Gary Crump about your medical problems or how to take advantage of BasicMed. These are just a few of the experts who happily and immediately answer member questions every day, to the tune of nearly 50,000 a year! And if they can't find your answer right away, trust me, they will work the problem to its conclusion.

If I'm sounding a little giddy about AOPA's offerings, please believe me when I say *I had no idea*. And worse than that, I fear you, our members, don't realize how much AOPA can do for you either. As the premier advocate for general aviation pilots in this country, we are here to help. The depth of the AOPA staff's understanding of aviation issues, problems, and solutions is, truly, mind-blowing. What we can and will do for our members sets us apart and aligns with the other very effective associations in this country advocating and protecting their interests for their members.

Over my many years of flying, there have been times when I could have used AOPA's thoughtful, and easily accessible advice had I realized it was included in my membership. Whether that was when I was in my early 20s trying to navigate a color vision deficiency that kept me from becoming an airline pilot, or when I accidentally clipped the edge of a TFR many years ago, or when I was looking to purchase my first airplane (a Pitts S–1S), or when I had a trip to Canada and needed to understand cross-border procedures, or more recently when I was trying to guide my son on whether to get a third class medical or BasicMed for his own aviation journey. AOPA could have helped me to quickly and accurately navigate each of these issues had I only realized that my AOPA membership already included access to experts in each of these areas.

Your AOPA membership dues can be the best investment you make to ensure your aviation journey remains as vibrant, inspiring, and rewarding as all your life's dreams should be. We are in your court. We are here to serve. You are a key member of the AOPA family. Call us. ■

darren@aopa.org

AOPA President and CEO **DARREN PLEASANCE** is a CFI and has flown more than 8,000 hours in more than 80 different aircraft.

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TOP STORIES /

Sport pilot privileges expand in October

AOPA helped deliver long-awaited rule changes

PILOTS WILL BE able to fly common aircraft such as the Piper Cherokee and Cessna 182 under sport pilot rules in October, the FAA announced at EAA AirVenture Oshkosh in Wisconsin.

Aircraft with maximum speeds of 250 knots calibrated airspeed, retractable gear, and constant-speed propellers will now qualify as light sport aircraft under the highly anticipated Modernization of Special Airworthiness Certification (MOSAIC), which dramatically expands the LSA category and sport pilot privileges. Aircraft with flaps-down stall speeds up to 61 KCAS will be able to be certified as LSAs, and pilots will be able to operate aircraft with clean stall speeds of up to 59 KCAS under sport pilot privileges. AOPA advocated for many of the expansions in the final rule.

"MOSAIC reflects the extraordinary vision and technological innovation of small aircraft manufacturers across the country," said AOPA President Darren Pleasance. "By expanding the kinds of aircraft sport pilots can fly—including many popular four-seat legacy aircraft—and by simplifying certification pathways, we are opening the door for more people to experience the freedom and joy of aviation."

MOSAIC overhauls the rules governing aircraft with special airworthiness certificates, most notably LSAs. The rule affects three major areas: pilots, aircraft, and maintenance. It will allow pilots to fly faster four-seat airplanes under sport pilot privileges, removing the 1,320-pound maximum takeoff weight limit, and raising the maximum level flight speed from 120 KCAS to 250 KCAS. Sport pilots will be able to fly aircraft with retractable landing gear or manual controllable pitch propellers with additional training and endorsements; night operations will require additional training and endorsements, as well as BasicMed or a third class medical. The rule also opens the light sport category to helicopters and electric vertical takeoff and landing aircraft.

Changes for sport pilots and light sport repairmen take effect on October 22, 2025, with changes for LSA certification following on July 24, 2026. AOPA and hundreds of other industry stakeholders have been hashing out standards for aircraft certification in an ASTM committee.

"This rule reflects years of hard work and persistence from AOPA and our industry partners to move general aviation forward into the next generation of flying," said Jim Coon AOPA senior vice president of Government Affairs and Advocacy. "This is an amazing opportunity for existing and future aviators. It's a great time to be in aviation."

ATC modernization funding passes

AOPA-backed effort delivers $12.5 billion in upgrades

PRESIDENT DONALD TRUMP signed H.R.1, known as the "One Big Beautiful Bill Act," into law on July 4, setting in motion a historic $12.5 billion investment in the nation's air traffic control system.

For more than a year, AOPA has worked with other aviation organizations to put aside another unproductive battle over so-called ATC privatization and coalesce around the need to modernize our nation's air traffic system. This joint effort has resulted in an industry consensus around modernization and ultimately led to the formation of a Modern Skies Coalition of more than 50 aviation organizations representing airlines, general aviation, manufacturers, labor, and airports.

The $12.5 billion included in H.R.1 has been described by Transportation Secretary Sean Duffy as a "down payment" toward a broader modernization effort, which some estimate could ultimately cost more than $30 billion. Here is how the initial funding will be used:

- $4.75 billion on telecommunications equipment.
- $3 billion to replace radar systems.
- $1.9 billion to consolidate three air traffic route control centers into one.
- $1 billion to consolidate terminal radar approach control facilities.
- $500 million for runway safety technology.
- The remaining $1.37 billion will fund additional infrastructure, such as weather stations, controller training, and advanced air mobility testing.

Advocacy kept historic airport alive

By Leon Jackler
AOPA vice president of airports and state advocacy

I SUSPECT THAT like many of you, the speed at which I tell people I meet that I'm a pilot can most accurately be measured by a Mach meter. I am almost as quick to tell fellow pilots that my home field, College Park Airport (CGS), is the world's oldest continuously operating airport. Its fascinating history can fill volumes.

However, that is only one of many aspects that make CGS so unique and important. You see, CGS sits about seven miles from the U.S. Capitol and the White House—so September 11, 2001, had an enormous impact on our operations and viability. For the first six months after the attacks, if not for military and public safety flights, we would have lost that "continuously operating" designation.

Since then, while restrictions on who can access the surrounding airspace and how they do so continue to be a challenge, the efforts of the local pilot community are a prime example of grassroots advocacy in action. Without near-constant pleading, letter writing, and negotiation, the most burdensome of those post-9/11 hurdles might still be in place—or worse, the airport might not have survived at all.

Together with our tireless airport manager, Lee Schiek, those of us who continued flying there worked hard to convince regulators to allow transient pilots, streamline the flight plan process, and move the vetting system online.

Today, while we haven't yet returned to our pre-9/11 numbers, College Park is active—if not vibrant. Several thousand pilots from around the country now have access to one of the most historically and strategically important general aviation airports in the nation. And so can you.

The lessons I learned about the power of pilot communities to save airports continue to inform my work to this day. ▪
leon.jackler@aopa.org

ON THE FRONT LINES /

Improve your short field skills

By Tom George
AOPA Alaska regional manager

BACKCOUNTRY FLYING IS a popular way to access more out-of-the-way places. It often means operating from off-field surfaces that lack published runway data, standard clearances—all the things that are "built in" when scoping out an airport in the chart supplement. Given the unknowns of these landing areas, you need to be able to hit your mark on touchdown and know how long it takes to stop—and to take off.

At Fairbanks International Airport (AFA), a volunteer crew goes out each spring and paints a set of markings on both ends of a 2,900-foot gravel runway, creating a "practice runway" that is 25-feet wide and 800-feet long. This provides a place to practice short-field landing and takeoff skills with comfortable buffers, while sharpening your technique—before heading out to true backcountry locations.

If you have a suitable gravel, dirt, or even a turf runway nearby, consider getting a local group of pilots to set up something similar. Search for "short practice runway" on AOPA's website for more information. ▪ *tom.george@aopa.org*

More online /
Read more about these stories and the latest from AOPA's advocacy team.
▶ **aopa.org/advocacy**

REGIONAL NEWS /

EASTERN REGION

Testified against a Massachusetts bill that would require compliance with "fly friendly" programs for tenant badges at the Beverly Regional Airport (BVY) and force the Massachusetts Department of Transportation to collect local noise complaints.

SOUTHERN REGION

Partnered with users and management at Pompano Beach Airpark (PMP) in Florida to promote the airport's benefits and educate city leaders and residents—after a commissioner proposed closing Runway 10 because of noise complaints. Continue to support the Everglades Airpark (X01) in Florida and the Friends of Everglades Airpark Inc. to push for improvements at the airport after averting a closure earlier this year.

CENTRAL SOUTHWEST REGION

Assisted the Skyhaven Pilots group in advocating for the airport sponsor of Skyhaven Airport (RCM) in Warrensburg, Missouri, to promptly correct compliance issues that are the subject of an ongoing FAA Part 13 investigation, after independent maintenance and flight training operations were forced to close.

NORTHWEST MOUNTAIN REGION

Successfully led a survey of Washington state AOPA members to gather statements about how a new law (S.5801) negatively impacts them. The law adds luxury and "privilege" taxes on aircraft worth more than $500,000. Nearly 500 aircraft owners responded, providing important data to help Aviation Caucus co-chair Rep. Tom Dent (R-Moses Lake) push for either reducing the law's impact or repealing it altogether.

ALASKA REGION

Six new ADS-B ground stations AOPA advocated for became operational adding coverage in portions of south central, interior and northern Alaska. Additional stations are being deployed.
▶ **aopa.org/advocacy/state-advocacy**

VIEW FROM CAPITOL HILL /

Spread the word

The crucial role of your membership in our advocacy

BY JIM COON / Senior Vice President, Government Affairs and Advocacy
AOPA Foundation Legacy Society member

AS MOST AOPA members know, general aviation is the foundation of American aviation. Including everything from flight training and recreational flying to business aviation, emergency medical transport, firefighting, and more, GA serves a vital function in thousands of communities across our great nation.

Through engagement with legislators, public policy initiatives, airport protection and promotion efforts, and educational outreach, AOPA plays a pivotal role on your behalf, to ensure that GA remains accessible, safe, and viable for future generations. Without strong advocacy from AOPA, many of the freedoms, resources, and opportunities that GA pilots enjoy today would be at risk. In my biased view, all pilots should be AOPA members. Simply stated, being an AOPA member ensures that GA voices are heard, considered, and respected.

One of the most pressing challenges facing GA is the threat of losing access to both airspace and airports. Across the country, some local airports face closure because of financial pressures, land development, noise complaints, and misinformed public sentiment. Many of these smaller airports, however, are lifelines for rural communities, emergency services, and economic activity. And these reasons are why AOPA successfully advocated for a significant increase in funding for GA airports in last year's FAA Reauthorization bill.

AOPA's Airport Support Network, consisting of more than 2,300 AOPA member volunteers, empowers local pilots to become stewards of their airports to help resolve issues or provide assistance. On a national scale, AOPA's advocacy works for GA pilots to ensure our collective voices are heard whether it be to fight for fair and reasonable airport and FBO fees; working to prevent ADS-B from being used to collect fees; modernizing aircraft certification rules, like MOSAIC (see "Sport Pilot Privileges Expand in October," p. 8); pursuing needed medical reforms such as the successful BasicMed initiative, which has made it easier for more than 90,000 private pilots to safely maintain their flying privileges without undergoing complicated and costly medical processes; addressing mental health; fighting against air traffic control privatization and advocating for a new and modern ATC system; and much, much more.

We work to develop programs and pathways for new pilots, mechanics, and aviation professionals so that GA has a bright future, but it's your AOPA membership that helps ensure AOPA remains an effective general aviation advocacy organization. Let's all collectively work together to ensure all pilots join us in this worthy endeavor. There is no other country in the world that can boast how influential and impactful GA is on so many levels. In a constantly evolving aviation landscape marked by technological change, shifting policy priorities, and competing interests, we too must grow and meet the challenges and opportunities before us.

AOPA's advocacy team works hard every day to help ensure that the needs and freedoms of GA pilots and aircraft owners are represented and protected in the face of political, economic, and regulatory challenges. We don't win every battle, but we certainly try.

Without AOPA's representation in the halls of Congress, state legislatures, and communities, GA could easily be sidelined or diminished as policy makers are faced with thousands of issues. This is why you and your AOPA membership are vital to leaving GA in a better place than you found it. Spread the word! ▪

jim.coon@aopa.org

Issues to watch

ADS-B. Ensuring ADS-B data is used only for its intended purposes of air traffic safety and efficiency—not for collection of fees or initiating investigations.

Medical reform. Addressing barriers that prevent pilots from disclosing and seeking care for mental health issues; decreasing wait times for medical certificate deferrals; pressing for Canadian adoption of BasicMed.

ATC modernization. Supporting the modernization of the air traffic control system—not privatization.

Regulatory improvements. Improving DPE availability, management, and oversight; supporting the rollout of new sport pilot and light sport aircraft rules (MOSAIC) and implementing new light sport aircraft standards; protecting access to airspace.

▶ **aopa.org/advocacy**

JIM COON spent 25 years on Capitol Hill in several senior staff positions, including staff director for the U.S. House of Representatives Committee on Transportation and Infrastructure.

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Dogfight

Are today's pilots falling short?

RUDDER & WRENCH

DOGFIGHT /

Are today's pilots falling short or raising the bar?

Essential character

Today's pilots come up short

BY DAVE HIRSCHMAN

THE CHARACTER TRAITS that contribute to pilot success are timeless. Grit and curiosity. Resourcefulness and self-reliance. Decisiveness and relentless pursuit of technical mastery.

These qualities have advanced aviation for more than a century, and they continue to define our community. But these attributes are often lacking among those new to flying.

Instead of tenacity and resilience, I encounter students who quit easily and reflexively blame others for their own shortcomings and serve up excuses like pancakes at an IHOP. They expect knowledge to be delivered to them as entertainment via YouTube. They regard effort as unseemly. They expect praise and affirmation just for showing up.

continued on page 85

These are the good old days

Pilots are better than ever

BY IAN J. TWOMBLY

NOSTALGIA IS A powerful emotion. We minimize our struggles and focus on the good events or the positive things we felt at the time. It ensures that we soldier on and rise to face another day.

Which explains why any belief we have about our past pilot corps being superior is poppycock. Today's pilots are every bit as good as those of yesteryear, if not far more competent, and there is a myriad of data to back it up.

General aviation is the safest it's ever been. Today's fatal accident rate is half what it was only 25 years ago. In GA's heyday of the 1970s, there were between 2 and 2.6 fatal accidents per 100,000 flight hours. Today it's 0.79, and the overall accident trend is even better. The 1970s opened with 18 accidents per 100,000 hours,

continued on page 85

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HEIDI SCHMIDT

Ian J. Twombly makes a good point about technology increasing the safety of aviation in "Dogfight: Are Today's Pilots Falling Short or Raising the Bar?" (August 2025 *AOPA Pilot*). But the point Dave Hirschman makes about new pilots coming up short is worth thinking about.

I always have a paper chart in my airplane. When learning to fly, in 1987, it was all I had to navigate, and my instructor taught me how to fold it so it would easily sit on my leg. I currently fly a Citabria built in 1973. It has no technology mounted in the instrument panel to help fly the airplane. It does have an ADS-B, which is required in the Baltimore-Washington Special Flight Rules Area.

John Shoemaker
Arnold, Maryland

AOPA Fly-In at Akron

I was interested reading Sylvia Horne's recent article about Akron, Ohio ("AOPA Fly-In at Akron," August 2025 *AOPA Pilot*).

I was employed by the Goodyear Tire and Rubber Company from 1977 to 1980. At that time, the corporate fleet was hangared at Akron-Fulton International Airport (AKR). More interesting to us was that Goodyear sponsored a flying club. The four airplanes in that fleet were two Cessna 172s, a Beech A36 Debonair, and a Beech V35 Bonanza all hangared at Akron-Canton Airport (CAK), south of the city.

The CFIs were employed by the company, usually as engineers. The company subsidized the airplanes and the instructors. Even better was the fact that all the employee fees could be paid through payroll deduction. At the time, there was not a more affordable way to get one's wings and build hours.

Howard S. Friedman
Philomath, Oregon

Trust Your Gut

With regard to Barry Schiff's column "Trust Your Gut" (August 2025 *AOPA Pilot*), I was so pleased that he took time to comment on the subject. I find his combination of experience and passion for all things aviation fascinating. Our gut intuition, I find as I get older, is usually always right. When I look back on 35 years as an agricultural pilot, I find that the times I got spanked was when I ignored "my gut." While I only bent one airplane in my career, that time as well as during some other "learning" occurrences, my gut had always warned me. Hopefully with age comes wisdom, and we can impress upon the younger generation to pay attention to those inner signals.

Dale Patterson
Wall, South Dakota

Honoring a Friend

I really enjoyed the article "Honoring a Friend" by Julie Summers Walker (August 2025 *AOPA Pilot*). The photo of Adrian Eichhorn and his PT–19 brought back a flood of memories for me. I suspect his father trained on the PT–19 during World War II, as my own father did.

Adrian is truly a historian, and through his dedication, he helps keep the memories of the "Greatest Generation" of aviators alive. His dear friend who left him that hangar clearly had a very good friend in return.

Paul Sanchez
Collierville, Tennessee

Test Pilot

I always enjoy the monthly "Test Pilot" quiz; however, I did want to bring to your attention an error in the August 2025 *AOPA Pilot*. Question seven regarding why the P–38 used a control wheel instead of a stick as did other U.S. fighters. The answer given was that the P–38's nose was too narrow to employ a traditional stick. The P–38's nose was pretty much the same approximate width as fighters with a

> Mike Ginter's "High Anxiety" (July 2025 *AOPA Pilot*) is an excellent article about the balance between stress and performance. Of course, this is a phenomenon that applies to many life circumstances. I appreciate the timely reminder!
>
> **Nicholas Comninellis**
> Liberty, Missouri

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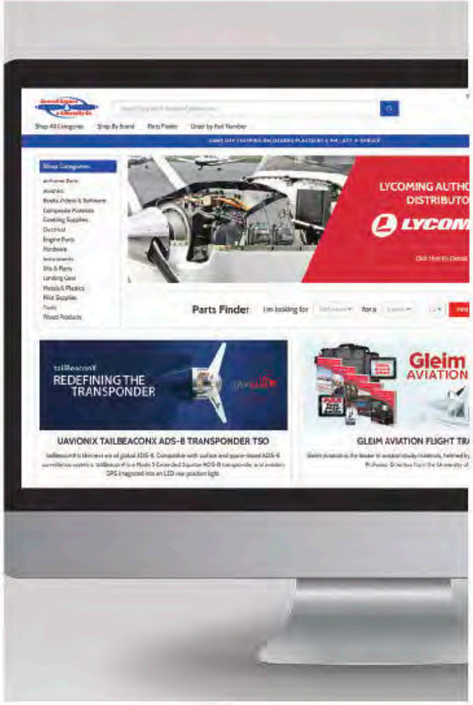
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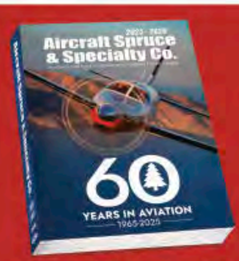
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single engine. The reason for the control wheel is that the nosewheel retracted rearward with the tire itself being beneath the cockpit floor, thus restricting the space needed for a control mixer box to accommodate a stick. The wheel actually required a hump in the cockpit floor to encompass the wheel when retracted. The Grumman F7F Tigercat, another twin-engine late fighter with a nosewheel, had an extremely narrow nose width yet incorporated the traditional stick control, as the nosewheel did not intrude into the underfloor space. A minor correction, but as a P–38 fan I couldn't let it pass!

Tony Bennett
Lakewood Ranch, Florida

Barry Schiff responds: The reason for the Lockheed P–38 Lightning has always been controversial. Let me explain why I believe the answer shown in "Test Pilot" is correct. In 1969, I was checked out in the Conroy Stolifter by Herman "Fish" Salmon for an article I was writing about this fascinating turboprop airplane. As you may know, Fish was a test pilot for Lockheed and particularly the P–38. While I was interviewing him, I mentioned that I had always wondered why the P–38 had a control wheel while all other U.S. fighters had control sticks. He said that I would hear all sorts of reasons floating around about that, but it had to do with the tight cockpit. "Have you ever sat in a Lightning," he asked. Of course, I had not. He told me that there was not enough room to provide for the lateral throw of a control stick. Lockheed had even considered using an articulated stick as the British used in the Spitfire, but this idea was discarded. A few years later, I bumped into Tony LaVier while Ernie Gann and I were playing ramp rats at Santa Paula Airport (SZP). Tony, of course, also had been a test pilot for Lockheed. He confirmed what Fish had told me about the control wheel in a P–38. This is the extent of knowledge about the Lightning. I'm not saying that you're incorrect. All I am saying is that I relied on what I had heard from pilots who I believe should know.

Grounded Perfection

I read with interest Dave Hirschman's excellent article "Grounded Perfection" (August 2025 *AOPA Pilot*), in which he describes the FAA's grounding of a restored PA–18 Super Cub because "the aircraft presented for inspection [was] not the same aircraft that was manufactured by Piper Aircraft Corporation..." and the subsequent judicial reversal of that ruling. It's great to see that the beautifully restored plane has caused us to answer one of the great philosophical questions of the ages, Theseus's Paradox.

In Greek mythology, Theseus, after slaying the minotaur and rescuing the children of Athens, escaped on a ship. According to Plutarch, the Athenians preserved the ship for ages, "for they took away the old planks as they decayed, putting new and stronger timber in their places." Plutarch, and later Thomas Hobbes, raised the question, which is taught in philosophy classes worldwide and remains hotly debated: If no pieces of the original made up the current ship, was it still the Ship of Theseus? Props to the administrative law judge for his answer (and getting the Super Cub in the air).

Scott Humphries
Houston, Texas

Practical Magic

I want to thank Sarah Deener for the great article "Practical Magic" (August 2025 *AOPA Pilot*). She stated that the Bristell Energic "will be the first electric-powered airplane to be certified under the CS-23." I understand the Pipistrel Electro (battery-electric Velis) was so certificated a couple years ago. Is that not correct?

John Sandvig
Seattle, Washington

Sarah Deener responds: The Pipistrel Velis Electro was certified under EASA ultralight and U.S. light sport rules. Bristell and H55 plan to certify the Energic under CS-23, the European equivalent of FAA Part 23. That allows the higher gross weight under current rules, among other things.

Fate Really Is the Hunter

I enjoyed Barry Schiff's article "Fate Really Is the Hunter" (July 2025 *AOPA Pilot*). I was present when Gann was inducted into a pilot group and got to shake his hand. I checked my bookshelf and found: *The High and the Mighty; Fate is the Hunter; Soldier of Fortune; Fiddler's Green; Twilight for the Gods; The Aviator; Island in the Sky; Song of the Sirens; Band of Brothers;* and *The Flying Circus*. Wonderful author.

Dale (Bud) Leppard
Morristown, New Jersey

Send your letters to pilot@aopa.org. Letters may be edited for style and space.

Hangar Talk /

"I don't often have the opportunity to attend a live concert," says Senior Features Editor **Julie Summers Walker.** "And to have the privilege to sit in front of the crowd for the performance of Drew Holcomb and the Neighbors was really a treat." In her story **"Music in the Air,"** p. 66, Walker not only gets a front-row seat for the concert after flying comfortably in the back seat of Holcomb's Cirrus but falls a little bit in love with the music, the venue, and, yes, the artist. "Drew's music is a wonderful reflection of his personality—upbeat, poetic, and inspiring—and the flight, even though we had to dodge some storms, was magical too because the pilot was a consummate professional and delight to fly with. He entertained Senior Photographer **David Tulis** and I by singing as we flew along the Mississippi River."

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Under the wing

My motivation for buying vintage airplanes

BY KOLLIN STAGNITO / Editor in Chief
AOPA Foundation Legacy Society member

HAVE YOU CAMPED in a tent next to the wing of an airplane? I hadn't until I bought an airplane in 2013 for that very purpose. That may sound crazy, but hear me out on my rationaliza...I mean logic.

For many years I camped in a tent at Camp Scholler during EAA AirVenture. Not owning an airplane at the time, I loved the convenience of camping just a short walk or bus ride from the airshow action. But when I walked the show, I was always envious of the campers who had—by my way of thinking—the primo camping spots: the airplanes on the vintage flight line. In 2013 I purchased an inexpensive vintage 1947 Cessna 140 to experience the joy of camping under the wing of an airplane with my then-10-year-old son.

My 140 has a useful load of only 424 pounds but my son didn't weigh much, and I could top off the fuel tanks and stuff everything that would fit in the baggage compartment and still be under gross weight. I never would have guessed the 140 could fit two small tents, sleeping bags, camping pillows, battery-powered fans and lights, clothes, towels, aviation gear, folding chairs, tools, tiedowns, and more in that little area behind the seats.

> I invite you to discover one of general aviation's truly special social opportunities.

The flight line camping experience was everything I hoped it would be: Dedicated time with my son, watching the airshow from under the wing of our airplane, sharing flying stories with hundreds of like-minded aviators late into the night, and waking up in the morning at the airport. There was no other place I would rather have been.

Each subsequent year that we flew to Oshkosh—or Antique Airfield (IA27) in Blakesburg, Iowa, for the Antique Airplane Association Fly-In, or Triple Tree Aerodrome (SC01) in Woodruff, South Carolina, for the Annual Triple Tree Fly-In—the quantity of fuel or gear we could carry shrank as my son grew. For a decade I sourced the lightest possible camping gear so that we could continue our aerial camping adventures in the 140. But two years ago, when we could only fill the fuel tanks half full because of weight limitations, I finally bought a larger airplane. My (still-vintage) 1953 Cessna 170B with an 826-pound useful load fits our current camping mission perfectly, and my son has been using the 140 to earn his private pilot certificate. He reached a big milestone when he soloed in June of this year.

Prior to the 170, our camping trips were limited to three or four nights; I couldn't crawl around in a small tent or sleep in a lightweight sleeping bag on the hard ground for much longer than that. Now the 170 easily carries me and my fully grown son and full fuel—and a six-person stand-up tent, air mattresses, full-size pillows, ice chest, and larger folding chairs. I've found these are the items that make camping even more enjoyable and enable me to camp next to the airplane for more than a week.

Over the past 12 years, I've also learned lessons about what not to do when camping with my airplane. Initially, I didn't know I should use a tent footprint (or a tarp) under my tent to prevent moisture from seeping through the tent floor—or worse, a twig poking through the floor. Yup, I learned both lessons the hard way.

I learned from other's misfortunes not to inadvertently place my tent in a low spot near the airplane, lest a rainstorm flood the tent and soak your clothes. I also discovered an airplane wing can shed a huge amount of water during a storm, and learned not to place the entrance to my tent directly below the trailing edge of the wing.

I learned that while tent guy lines seem pointless when setting up a tent in calm weather, I really needed them when the wind began to howl (my son still talks about a memorable tent-collapsing episode). And I learned to use the most secure airplane tiedown kit and control locks I could find. There is nothing worse than worrying about your airplane blowing away—or your control surfaces getting damaged—during a storm.

If you haven't yet camped next to the airplane you fly, I invite you to discover one of general aviation's truly special social opportunities. There are still plenty of fly-ins remaining this fall that encourage camping, and the cool evening weather will be a refreshing break from our recent hot summer days. We (the campers) look forward to seeing you, your airplane, and your tent at the next fly-in. ■

kollin.stagnito@aopa.org

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KOLLIN STAGNITO, AOPA senior vice president of publications, is an instrument-rated commercial pilot, ground instructor, and owner of a Cessna 170B.

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Aeronautical artwork

Please don't call them maps

BY BARRY SCHIFF / AOPA Foundation Legacy Society chairman

MY FASCINATION WITH maps began in grammar school. This is when our geography teacher, Mrs. Phillips, distributed outline maps of the United States to each student. The country and each state were outlined in thin blue lines. No topographical or cultural features were shown.

We learned the states one at a time, coloring and labeling each as it was taught. When the map was complete (including state capitals), we took our masterpieces home for framing.

That summer, my family moved from New Jersey to California, and I followed the route of our Dodge sedan on the road maps given away freely at gas stations. I could not believe that there were no thin blue lines on the ground to show when we passed from one state to the next. Little did I know the role that charts and maps would play in my life.

Is there a difference between a chart and a map? Yes, but only to a purist who pompously insists that a chart is a map modified for navigation (or other special use). "All charts are maps," he would say, "but not all maps are charts."

My first experience with an aeronautical chart occurred during my presolo dual. My instructor sat in the back of the tandem-seated Aeronca Champ and used a rolled-up chart to whack me on the noggin every time I screwed up, which was more often than not.

At the end of each flight, he would replace the worn-out chart with a new one—they cost 25 cents in those days—in preparation for his next victim. One day my curiosity got the best of me, and I stealthily retrieved a used chart from the trashcan. I carefully opened the rumpled sectional like an archeologist inspecting an ancient scroll. The colorful patterns and mysterious hieroglyphic-like symbols were fascinating.

Aeronautical charts are magnificent pieces of art and are becoming almost as expensive. They are beautiful portraits of the Earth that provide us with reliable guidance. With them, a pilot can window-shop the world and fly vicariously to wherever he might wish to wander. Charting and planning a flight—real or imaginary—is satisfying unto itself.

If a painting is worth a thousand words, then an aeronautical chart must be worth a million because of the wealth of information it contains. Trouble is, we get short-changed. The abbreviated legend printed on each chart does not show all possible symbols. Those serious about chart reading should obtain a copy of the invaluable *Aeronautical Chart Users' Guide* or reference it online (bit.ly/ChartsUserGuide). Be the first on your block to know how flumes, penstocks, and peat bogs are symbolized.

One of the most enjoyable aspects of planning a long flight, especially one along an unfamiliar route, is to lay out charts on your dining room table and use a yardstick to plot a direct route from destination to departure. You can then inspect the course and modify it as necessary to sidestep restricted airspace and hostile terrain. (The problem with using GPS to fly direct routes without such planning is that we often are led along routes strewn with hazard.)

Standing back from the charts, it is easy to see the overall and irregular nature of the terrain and envision how it can affect weather. It is not difficult to "see" upslope fog creeping on cat's feet along Appalachian slopes, or mountain waves undulating across and downwind of the ridges of the Rockies, or storm systems marching inexorably across the country.

Are we required to carry current charts aboard every flight? No, except in specific cases, but should a pilot get into difficulty because of not having one, he or she will have serious explaining to do.

I also take aeronautical charts with me on long road trips (whether or not I plan to fly). They not only enhance my knowledge of unfamiliar topography but also lead me to local airports. Being an inveterate ramp rat, I find delight in visiting small airports along the way. You never know what fascinating aircraft you will discover or people you will meet. Aeronautical charts also help to orient a lost driver because they show so much topography.

Another wonderful use for aeronautical charts is to follow world events as they occur. I often obtain digital TPCs (tactical pilotage charts produced by the military) to pinpoint specific events and topographical areas. These provide a better sense and appreciation of what is going on around the world than a small-scale atlas. This also is a wonderful way to get youngsters interested in world affairs while simultaneously teaching them how to read maps (and becoming sharper yourself). ▪

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BARRY SCHIFF has been flying for 72 years, is a retired TWA captain, and has logged more than 28,000 hours in 364 different types of aircraft.

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No such thing as a bad day flying

Savoring the smooth and bumpy moments alike

BY NATALIE BINGHAM HOOVER

HAVE YOU HEARD that *Just Fishin'* song by Trace Adkins? It's a sweet song about a dad and his young daughter making lifelong memories while sitting on a riverbank. "She thinks we're just fishin'," he sings. We had a so-much-more-than-fishing moment in my favorite place on the planet, Apalachicola, Florida.

I was sitting on the back of the boat, book in hand, watching my husband and son cast a line off the front. Not much for fishing myself, but there's nothing better than a boat ride on a sunny day. Matthew, 7 or 8 at the time, had just reeled in another catfish. In Apalach, everyone has a nickname. Matt's is "Catfish" because that's what is so often at the end of his line despite all efforts to catch anything else. (I won't tell you my Apalach name. It was given to me by the owner of the local bar who had had one too many Bushwhackers. Neither appropriate nor accurate, in my opinion.) Back to Catfish, who in his frustration told his dad, "Let's just go back. I'm never going to catch anything good. Not even worth being out here." I'm sure you know what happens next. Dustin, my husband, well versed in the frustrations of adulthood, explained to our son what every young fisherman must learn...you may not always catch what you want. You may not catch anything at all, but you're still blessed to be on a boat in the middle of the bay, casting out a line. There's no such thing as a bad day fishing.

My brother, Chas, who is also a pilot, learned a similar lesson about flying years ago when he was still instructing. His student was an older man and had about 10 times more life experience than my 25-year-old brother. The man had been out of flying for several decades and was hoping to get proficient again. Chas just went on and on about this student, how intelligent he was. Humble. Great sense of humor. Unfortunately, it had been so long since he'd flown that he was having a hard time getting those skills back. His age combined with the high-speed world of flying in busy airspace made Chas start to doubt that he'd ever be able to help this student reach his flying goals. He dreaded the tough conversation he knew he had to have with a man he respected immensely. "I'm sorry," Chas finally told him. "I'm happy to keep flying with you. But I know it's expensive, and I just don't think I'll be able to get you over the hump." The student became the teacher that day when he responded, "That's all right. I'm just glad to be up here learning something new. Best part of my day, getting in this airplane."

Over lunch one day, I was chatting with a nonpilot friend about one of his flying experiences. He was travelling for work in the owner's Beechcraft Baron on a hot, bumpy day. He never really felt sick, he said. It just wasn't the pleasant, smooth flying experience he expected. "I don't know how y'all do that every day," he said, referring to my pilot work. I commiserated because some flights are like that, especially at the altitudes we fly in general aviation. Those are the days you have to play all the mental games with yourself. I don't know what your tricks are, but when the turbulence just won't let up, I pretend I'm on a boat, fruity drink in hand, riding the choppy waves out to the islands. But even then, there's still nothing else I'd rather be doing. And for all the days that are miserably rough, there are just as many smooth-as-glass morning flights that remind you why you love it so much. We may not always get what we want, but there's still no such thing as a bad day flying.

> For all the days that are miserably rough, there are just as many smooth-as-glass morning flights.

My son, Matt, now 10, is a much more experienced fisherman and can tell you the exact length that makes almost any fish in the Apalachicola Bay a keeper. I went fishing with him this week off the pier behind our Florida house. OK you caught me; I sat in a chair with a book while he cast a couple of times and came up with nothing but seaweed. We laughed about a previous day we had in that same spot when it felt like there was a whole aquarium right there under our feet. So many strange things ended up on the line. A black and white striped, zebra looking fish with weirdly human teeth; a sheep's head, he informed me. A baby sting ray. A too-small-to-keep redfish. Several catfish (of course), so big he needed help reeling them in. But no such luck this time. "That's all right, mom," he said. "Sometimes you don't catch anything. Can we try this again tomorrow?" ▪

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NATALIE BINGHAM HOOVER began flying in 2004. After corporate and airline work, she now serves as an FAA designated pilot examiner and chief instructor of a flight school in Mississippi.

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Right at the start

In pursuit of the perfect flight

BY MIKE GINTER / Senior Vice President,
AOPA Air Safety Institute

WHO AMONG US has ever tried to taxi out of the parking spot only to discover the chocks were preventing forward motion? Have you ever seen zero airspeed during the takeoff roll only to discover the pitot tube cover was still in place? Have you ever entered a new frequency into the radio only to discover you're still talking to the last controller because you didn't hit the flip-flop button? I have experienced each of these aeronautical sins and many others over the years—thankfully without FAA enforcement action or injury to pilot or aircraft.

Other pilots have not been so lucky. At the AOPA Air Safety Institute, we review plenty of NTSB accident reports that list the "defining event" as a relatively small but critical detail that was overlooked or dismissed by the pilot—sometimes with disastrous effect. We recently reported a Cirrus SR22 accident that started with a complete electrical failure and loss of communications, which resulted in a compound emergency and four fatalities after the pilot elected to continue VFR to his destination. Had the pilot elected to land as soon as practicable, the outcome would have been a delayed trip to the destination while the faulty electrical system was repaired. We also reviewed a nonfatal accident caused by the mechanic's failure to properly install the throttle cable hardware after new avionics were installed, causing subsequent loss of engine control and a forced off-airport landing on a test flight. Had the mechanic been more thorough with the maintenance or had the pilot performed an extensive preflight under the cowl, that aircraft might still be flying. And, we examined the details of the fatal crash of a Cessna 340A on an instrument approach in marginal VFR conditions in Southern California that the NTSB attributed to loss of control in flight caused by spatial disorientation. Had the pilot recognized the onset of spatial disorientation and opted to correct that problem before commencing the approach, the accident may have been avoided.

It is easy for us to look back with 20/20 hindsight on the events leading to an accident from the comfort of our favorite recliner and reflect on how we might have made different decisions. The challenge is to translate what we learn in these accident reports into true change in how we observe and react to events in the cockpit as they happen and institutionalize a mindset that helps us reach better outcomes.

My attempt to institutionalize this changed mindset is to fly the perfect flight from preflight to shutdown on every flight. For me, the perfect flight has zero mistakes. As I approach the aircraft to begin the preflight, I mentally commit to making that flight flawless. My goal is to miss nothing on the preflight; hit every step of the startup, taxi, and pre-takeoff checklists in the correct order; enter every waypoint and frequency correctly the first time (tough to do on a touchscreen display in light to moderate turbulence); and hit every assigned altitude and heading to within commercial pilot standards. Having pursued this perfect flight for many years, I would silently congratulate myself after each flight that I deemed "perfect."

The challenge is to translate what we learn in these accident reports into true change.

But now I realize that my pursuit of the perfect flight is more of a mindset than a result. In his book *The Perfect Flight* (1988), Richard L. Collins captures this quest in an effort to strive for excellence in every phase of flight and ensure a safer and more enjoyable flying experience. As a brand-new pilot in the 1980s, I remember enjoying Collins's experience and perspective with great interest. My personal quest for the perfect flight is not as romantic or eloquent as Collins writes about. But he helped shape my approach to every flight—my desire to do it right the first time. I believe this approach to flying makes me more observant of every detail and allows me to address anything that is not "perfect" as I discover it. While I cannot conclusively say this has made me a safer pilot, I must admit that this approach has worked—so far! Does the quest guarantee a safer flight? No, it doesn't. Am I as susceptible to pilot error as any other pilot? Absolutely. But my quest for the perfect flight has improved my scan and attention to detail, which goes a long way toward handling the unexpected whenever that may occur.

Stay safe and stay focused! ■

mike.ginter@aopa.org

MIKE GINTER is the senior vice president of the AOPA Air Safety Institute. He spent 27 years in the U.S. Navy, retiring with the rank of captain.

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A slap on the wrist

Trouble with special issuances

BY DR. BRENT BLUE

SOMEONE HAS FINALLY told the FAA's Office of Aerospace Medicine that it cannot arbitrarily deny a medical certificate without individual evaluations. That someone, significantly, was the United States Court of Appeals for the District of Columbia Circuit on June 27, 2025.

Michael Solondz was denied a medical special issuance for being on a specific medication, and he took it to the Court of Appeals. The medication was ruled disqualifying by the FAA without any individual evaluation being considered. This kind of arbitrary decision-making is not unique. The FAA imposed a five-year waiting period for bleeding in the brain regardless of all the other specific circumstances. In Solondz's situation, the FAA also kept coming up with other issues from his distant past medical history, which became a roulette of excuses where the court found "the agency's previous denial letters displayed shifting justifications that were, in some instances, illogical"—a denial technique the FAA has employed for years.

The court also stated, "We conclude that the Final Denial Letter was arbitrary and capricious because the FAA has not adequately articulated a rationale for its policy categorically barring pilots under treatment with mirtazapine (Remeron) from Special Issuance medical certification." The court was "unclear how the FAA resolved apparent contradictions between the medical studies on which it relied and its conclusion...."

What does this mean for pilots on special issuances and pilots who may need them in the future? That is the big question for the FAA as well as pilots. As I have mentioned in this column over the years, the FAA has used a "check box" approach to medical qualification decisions. Although AMEs are trained to evaluate pilots, they have no discretion to make decisions since almost every disease or condition requires the use of a FAA designed template that uses a yes/no decision tree. In the decision tree, if the pilot falls into a single "yes" category, the pilot must be deferred. There is no option for the AME to say "yes, but..." due to specific circumstances that would not impact the pilot's ability to safely fly.

From an AME perspective, 99 percent of all pilots I defer to the FAA because they have a "yes" answer on the template—whom I have evaluated, and I believe are safe to fly—eventually get their medical. It may take months or years because of the backlog at the agency, but it will eventually come. Of course, the "shifting justifications" mentioned previously causes delays when the FAA asks for more information or testing. When that request happens and the desired material is returned to the FAA, the case goes to the bottom of the pile, which means a duplication of the first delay.

There are pilots who I believe are not safe to fly, and I have no hesitancy to state that to the pilot or the FAA. Some people are just not healthy enough or medically stable enough to fly.

A pilot who was applying for a special issuance left a message for me saying he wanted to make sure he had all the necessary paperwork for his application. When I reached him, he told me he had promised himself that if he ever felt he was not safe to carry passengers or might endanger someone on the ground, he would stop flying. Between the time he left the message and a few days later when I contacted him, he told me he had an event that would make him unsafe to fly and was abandoning his quest for a medical. He was satisfied with his long history as a pilot and understood safety was the priority.

> The medically related accident rate is so small that it is a non-number, proving pilots make safe decisions about their medical readiness to fly without input from the FAA.

This self-monitoring works and works well as demonstrated by the statistics from the FAA. When I pass an applicant for a medical, I am certifying that the pilot is safe to fly. However, that pilot certifies that he or she is safe to fly every time they get into that cockpit over the next two to five years depending on their age. The medically related accident rate is so small that it is a non-number, proving pilots make safe decisions about their medical readiness to fly without input from the FAA.

Hopefully, this significant slap on the wrist from the Court of Appeals will steer the FAA to a more reasoned approach to medical certification. ■

brent@brentblue.com

DR. BRENT BLUE is a senior AME who flies a Cessna 185 out of Driggs, Idaho, near Jackson Hole, Wyoming.

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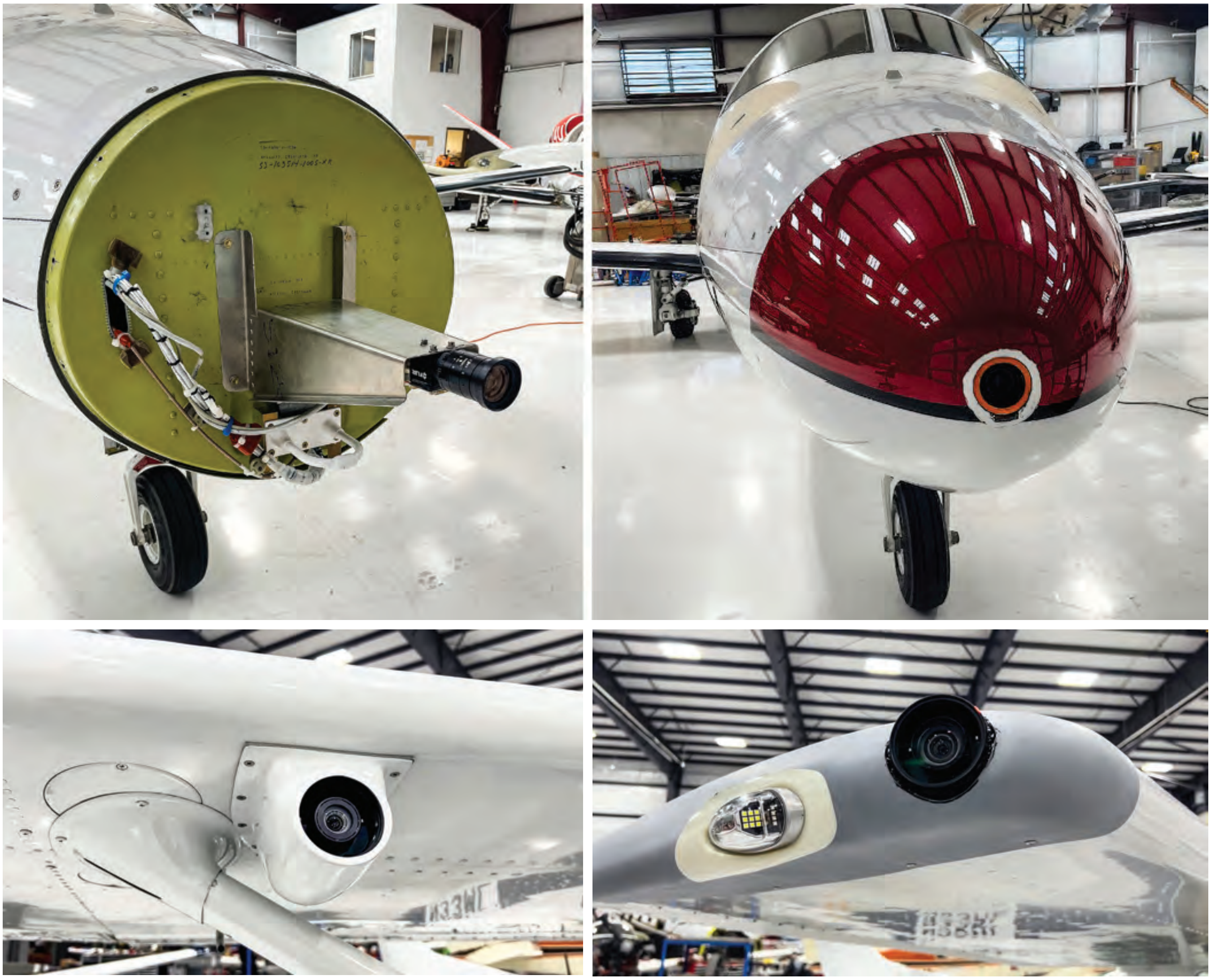
RIEFING

Compiled by Julie Summers Walker

Photography by Chris Rose
and David Tulis

DAEDALEAN

FUTURE FLIGHT /



Daedalean's neural networks can identify objects from just a few pixels. While the system tolerates some dirt, fog, and precipitation on the lens, performance degrades with deteriorating visibility. To address this, Daedalean is working to incorporate sensors that are not dependent on visual conditions, such as infrared cameras.

Daedalean PilotEye

The future of AI-powered traffic detection

BY CHAD JONES

PICTURE THIS: You're flying low, 3,000 feet agl on a beautiful day, approaching a scattered cloud layer in Class E airspace. No traffic appears on your GPS, electronic flight bag, or in your field of vision. But the camera attached to your cowling has been working overtime, scanning what's ahead with more accuracy and efficiency than you ever could. It detects a glider—one without ADS-B Out or FLARM (flight alarm collision avoidance)—silently descending through your projected flight path, and it does so early enough to give you time to process what's happening and turn, perhaps before the glider pilot even sees you. It's a nonevent. No close calls, no risky evasive maneuvers, and plenty of time for methodical analysis and action. That's the promise of Daedalean's AI-enhanced visual traffic detection system, PilotEye.

Daedalean, based in Zurich, Switzerland, is developing a suite of AI-enhanced tools under the product line Ailumina. PilotEye is the first of their products undergoing concurrent certification by the FAA and the European Aviation Safety Agency (EASA). Designed for fixed-wing aircraft, PilotEye works as a redundancy to existing traffic-avoidance systems by scanning for things like birds, gliders, and parachutes

DAEDALEAN

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Traffic detection:
bit.ly/DaedaleanTrafficDetect

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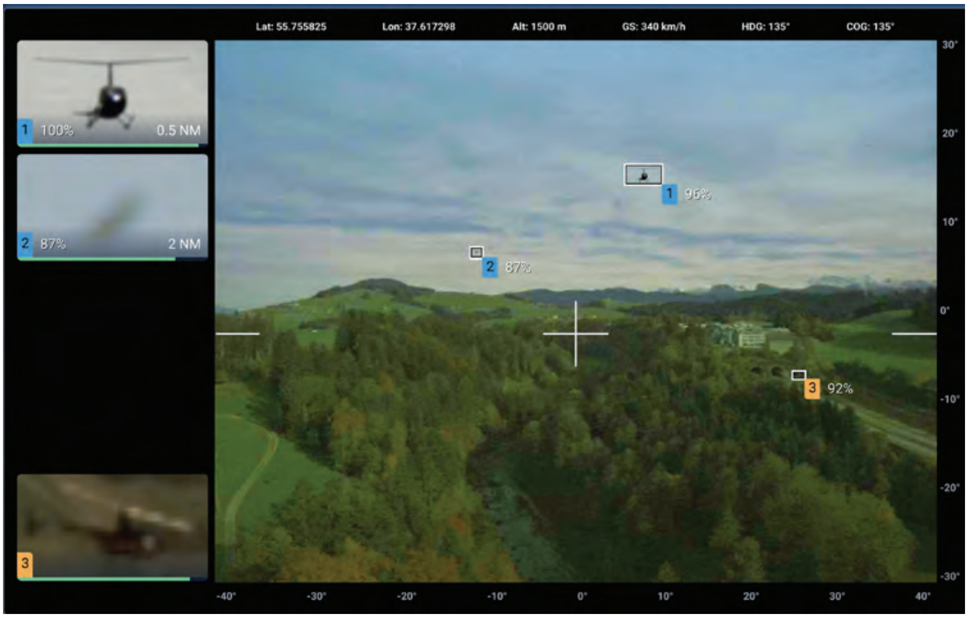

DAEDALEAN

and alerting pilots to potential hazards. PilotEye is branded separately from Daedalean's other tools because it originated as a jointly developed product with U.S.-based avionics manufacturer Avidyne. Daedalean expanded into the U.S. market by opening an office in Phoenix, Arizona, in 2022, and the company is working to certify a version of the technology for rotary-wing aircraft called Ailumina Vista.

"Daedalean's visual traffic detection system will probably be the world's first safety-critical product for civil aviation based on machine learning," says Daedalean CEO Bas Gouverneur. That's not hyperbole; as of this writing, no safety-critical AI technology has been certified for use in civil aviation. This is new territory for regulators. "Before our STC project, no practical test of the new concepts had begun," said Gouverneur. "That's why our certification process has such an unusual character, with the two regulators, FAA and EASA, concurrently watching each other's progress. They want to ensure from the beginning that they are aligned."

Certification is a yearslong process, but the technology has passed two of four stages of involvement (SOI) audits, with the third commencing summer of 2025. The process ensures the software complies with rigorous safety standards. But given the novel nature of incorporating AI with standard technology and components, there are a few extra hoops to jump through.

"AI software is not created as classical program code—there are no lines of code that can be checked to meet requirements and be debugged," says Gouverneur. "AI is tuned through adjusting millions of parameters during the learning process—too many parameters for a human to control and trace how they impact the resulting output of a system." Because there is no traditional code that can be reviewed, regulators are essentially mapping out an entirely new approach to assure the safety and reliability of Daedalean's AI-based applications.

The software collects data during flights conducted over different regions to teach their AI what it should be looking for. Algorithms process the video captured on these flights to develop "semantic understanding," or the AI's ability to interpret meaning and context from datasets by piecing together patterns. This allows the system to accurately distinguish a parachute from, say, a cloud. The system's ability to make connections from these patterns is improved as more data is collected and analyzed.

For those who may be concerned about flying with unpredictable AI that evolves or learns in real time, put your minds at ease. The system is, according to FAA classification, "machined-learned" as opposed to "machine-learning." "Training is done in Daedalean's labs, and the system's neural networks are fixed," says Gouverneur. "It doesn't evolve or learn during operation. It behaves deterministically: Given the same input, it will always produce the same output." That is, the system is always predictable. Software updates are tested and validated before being installed during ground maintenance.

As presented, the tool offers GA pilots considerable utility. Take wires for example, obstacles that are notoriously difficult to detect during flight. Gouverneur says their neural network can reliably analyze wires even when they are only a few pixels wide and nearly invisible to the pilot.

Gouverneur said the capabilities of Daedalean products position the company to reach across multiple industries, and the company anticipates being tapped by other developers for its expertise and guidance on how to navigate the certification process for systems enhanced by AI. "And since the framework that we elaborated with EASA is universal, it applies to any machine learning process," says Gouverneur."

It was announced in August 2025 that Daedalean will be acquired by Destinus, who plans to integrate the technology into their unmanned flight systems, serving both the civil and defense markets. Based in the Netherlands, Destinus has grown to become one of Europe's largest manufacturers of unmanned aerial vehicles. ■

chad.jones@aopa.org

▶ **daedalean.ai**

▶ **destinus.com**

SWEEPSTAKES /

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DAVID TULIS

She's the winner

Jennifer Hortman flies off with the 182

BY NIKI BRITTON

FOR THE PAST 21 months, we've shared the journey of transforming a 1958 Cessna 182A from a bare aluminum shell with a yellow velveteen interior into a beautifully resto-modded, do-it-all airplane. It's been a labor of love, and an amazing story of aviation restoration and industry collaboration. Now, here's the next chapter of that journey, the moment we handed the keys over to its new owner.

It all started when we received the name of the winner: Jennifer Hortman of Murrieta, California, a certificated flight instructor who recently earned her airline transport pilot certificate. What made Hortman's story even more meaningful was that she had recently returned to aviation after a long time away. And she hadn't just returned, she came back with vigor, earning her ATP certificate and a type rating in a Cessna Citation XL earlier this year, all on her own dime.

Once we confirmed that she was eligible to be our winner, it was time to get to work on our favorite part of the sweepstakes tradition: the surprise.

The next sweepstakes

The next AOPA Sweepstakes aircraft is a 2024 Aviat Husky A–1C-200. AOPA thanks the great team at Aviat Aircraft, which sold the Sweepstakes aircraft to AOPA at a generously reduced price, for their significant contribution to the AOPA Sweepstakes. Unfortunately, the aircraft was involved in a ground incident en route to EAA AirVenture. No one was injured. The Husky will undergo necessary repairs and will be back in the air soon. Watch the progress and the adventures of the Husky on these pages and online.

▶ aopa.org/sweeps

We wanted to surprise the winner at EAA AirVenture in Oshkosh, Wisconsin, because honestly, what better place is there to give away an airplane? The timing couldn't have been better either. It just so happened that this year marked Hortman's 30-year anniversary as an AOPA member.

That gave us the perfect cover story.

I called Hortman just before the show began and told her we were celebrating member milestones at AirVenture this year, and as part of that, we were flying out a select group of members to say thank you. These members would meet AOPA President Darren Pleasance, be interviewed for a short video, and receive their membership pin.

I told her the original 30-year honoree had to cancel at the last minute, and that her membership number was next on our list. We hoped she'd be willing to step in and represent the milestone. It was a bit of a gamble, but to our surprise, she said yes. She even rearranged her schedule and committed to meeting us in Oshkosh the following week.

Once we knew she was coming, a more detailed plan was hatched. The idea was to keep the surprise intact by having Alicia Herron, the other sweepstakes manager and Features Editor, meet with Hortman for a casual membership spotlight interview. It was framed as a chance to talk about her flying background, her time as an AOPA member, and the value she's found in aviation and her membership over the years.

Hortman arrived at AirVenture, her first time ever at the show, perfectly kitted out in a dress adorned with aircraft, airplane earrings, an airplane necklace, an airplane hair scrunchie, and even airplane socks.

Meanwhile, a crowd began gathering around the sweepstakes aircraft, eager to find out who the lucky winner would be.

As the interview wrapped, Herron brought our still unaware winner over to join the crowd, where Pleasance and I were waiting to kick off the giveaway.

After a short intro from me, Pleasance began reading off clues about the winner, general at first, then gradually more specific. With each detail, Hortman started to put the pieces together. By the end, it was obvious: She was the winner. And the look on her face? Pure shock and joy.

She graciously accepted the keys and then came the moment everyone will remember: She called her husband on speakerphone, right in front of the crowd.

"Hey," she said. "I'm coming home with an airplane."

His response?

"What?"

"I won the AOPA Sweepstakes 182."

"What!? You're kidding!"

That's when Pleasance chimed in to confirm that Hortman really had won the AOPA sweepstakes.

It was a perfect ending to a perfect day. After a quick walkaround and dealing with essential paperwork, the new owner of the Sweepstakes 182 spent the evening celebrating with the AOPA team. Hortman flew her prize home to California with her friends sharing the 1,500-mile journey.

We couldn't have asked for a more deserving winner, or a more heartfelt handoff. ▪ *niki.britton@aopa.org*

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NEWS FROM OSH

MOSAIC announced

Pilots will be able to fly common aircraft such as the Piper Cherokee and Cessna 182 under sport pilot rules effective October 22, 2025, the FAA announced at EAA AirVenture. Aircraft with maximum speeds of 250 knots calibrated airspeed, retractable gear, and constant-speed propellers will now qualify as light sport aircraft under the highly anticipated Modernization of Special Airworthiness Certification (MOSAIC), which dramatically expands the LSA category and sport pilot privileges (see "Action: Sport Pilot Privileges Expand In October," p.8).

EAA honors AOPA presidents

Former AOPA President Mark Baker received the Experimental Aircraft Association's Freedom of Flight Award at EAA AirVenture. Current AOPA President Darren Pleasance also became an EAA director emeritus at AirVenture.

Elixir FAA-certified

The FAA granted FAR Part 23 certification to Elixir Aircraft's two-seat composite trainer, the company announced at EAA AirVenture.

Able Flight celebrates milestone, new leadership

It was an emotional and touching moment for everyone in attendance as Able Flight honored its "Class of 2025" at EAA AirVenture—and founder Charles H. Stites caught many by surprise announcing his retirement.

▶ aopa.org/osh2025

NEWS /

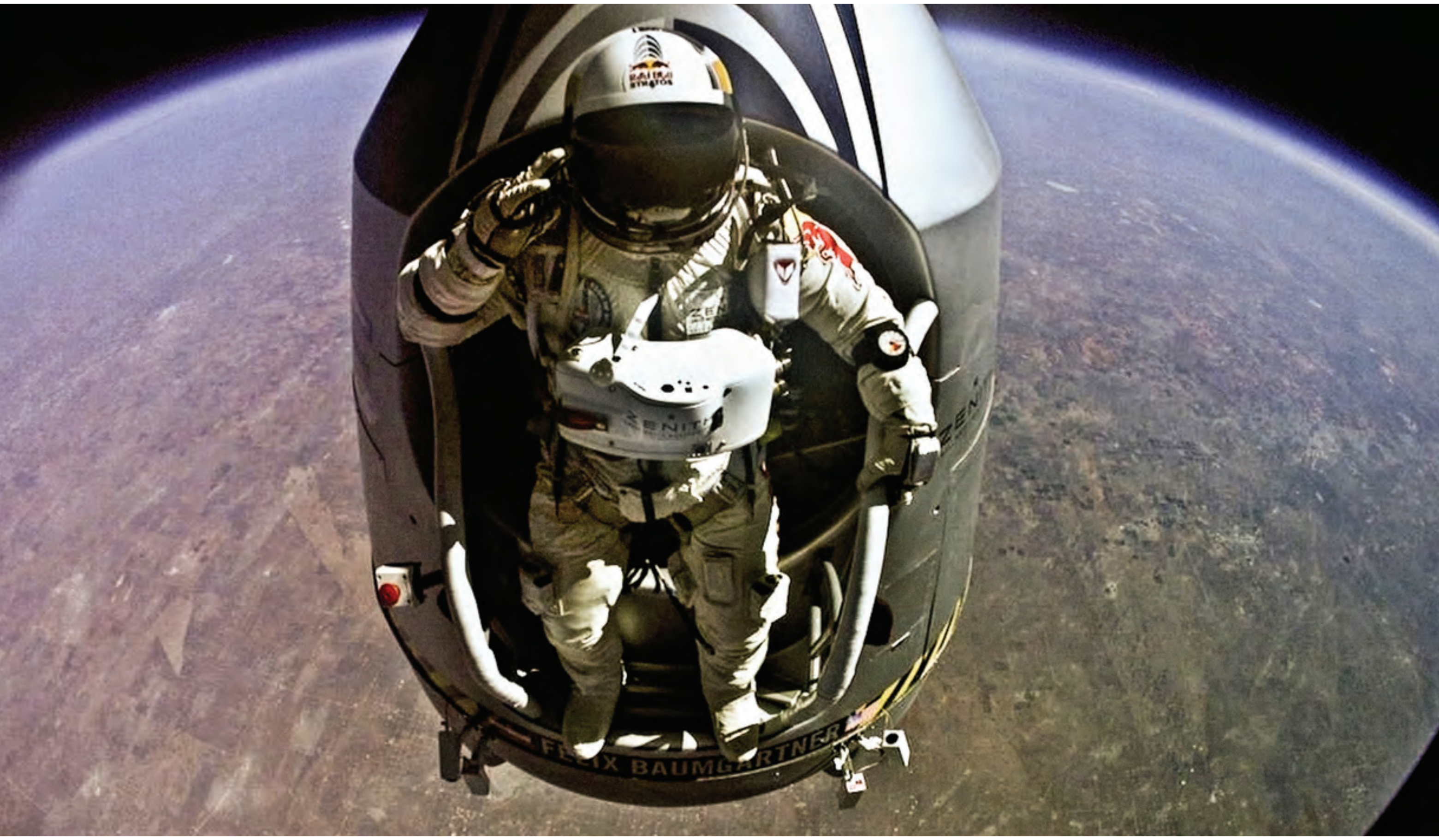
Stratos adventurer Baumgartner dies

AUSTRIAN EXTREME ATHLETE Felix Baumgartner died July 17 during a paragliding accident in Italy. He was 56. Baumgartner lost control of his powered paraglider and crashed into a hotel pool in Porto Sant'Elpidio, near the Adriatic Sea. The accident also injured a woman on the ground. Local media have reported he had been feeling "unwell" and may have suffered a medical emergency during the flight.

Baumgartner gained worldwide fame in October 2012 when he became the first human to break the sound barrier in freefall, jumping out of a helium-filled balloon in the stratosphere.

The jump from an altitude of 128,100 feet—which was broadcast live by the Discovery Channel and online—was called "Project Stratos" and sponsored by Red Bull. The ascent to the edge of space was then the highest crewed balloon flight and during his freefall, wearing a pressurized suit, Baumgartner reached a top speed of Mach 1.24. A team of 300 engineers, scientists, and specialists supported the mission.

Baumgartner was born on April 20, 1969, in Salzburg and completed an apprenticeship as a machinist. He learned to skydive at 16 and later joined the Austrian armed forces and trained to be a tank driver. Afterward, he worked as a professional boxer, motocross rider, helicopter pilot, and BASE jumper before taking on his riskiest project, and the one that propelled him to fame as a daredevil adventurer. The Red Bull jump, he said later, was the "highlight of [his] career."—*Pilar Wolfsteller*



ABOVE: JOERG MITTER / RED BULL CONTENT POOL BELOW: RED BULL STRATOS / RED BULL CONTENT POOL

Earthrounders mark historic moment

A flyover 80 years later commemorates the end of World War II

BY JULIE SUMMERS WALKER

TWO INTREPID PILOTS who are connected by friendship, accomplishment, and history marked an historic milestone, flying over the former U.S. Air Force base where more than 20,000 pilots trained for missions during World War II. Wendover Air Force Base in the remote Great Salt Lake Desert in Utah was the training site of the epic August 1945 flights of the *Enola Gay* and *Bockscar*, which would drop nuclear bombs on the Japanese cities of Hiroshima and Nagasaki, ending the war and killing more than 100,000 people on August 6 and 9.

Adrian Eichhorn and Shinji Maeda flew their 60-year-old Beechcraft Bonanzas in formation over the field on August 6, 2025, marking the eightieth anniversary of the bombing.

"It is history forgotten," Eichhorn told CNN's Pete Muntean on the day of their flight. "If this helps renew the interest to thank all the people involved in the war effort, that's important."

Eichhorn and Maeda have formed a friendship based on their mutual interests in aircraft, history, and successful attempts at circumnavigating the Earth in solo missions. Eichhorn flew his modified Bonanza around the word in 2016 and over the North Pole in 2021, and Maeda flew his Bonanza around the world in 2021. That Eichhorn is a retired U.S. Army veteran, and Maeda is a native of Japan has lent the shared flight over Wendover Field gravitas. And Eichhorn was a nuclear adviser to President Bill Clinton for four years.

"You could have asked anybody on the planet in 1945 when we dropped the first atomic bomb if Japan and the United States would someday become allies and I would argue that nobody would have said yes," Eichhorn told Muntean. "The shock effect, the devastation of it—I still think it's probably one of the most difficult decisions the United States ever had to make."

"There are lots of wars on this planet," Maeda added in their interview with Muntean. "The question is, why are we not learning from history?"

As they flew wing to wing over Wendover Field, a professional video team captured the moment. The two friends and pilots hope it becomes a metaphor for how far the relationship between the United States and Japan have come.

"It is the fellowship of airmen," Eichhorn said. "We have a bond with each other."

"He's been my sensei, friend, and brother," Maeda said. "That is the beauty of aviation. I am very proud of this relationship." ▪ *julie.walker@aopa.org*

WHY I LOVE MY AIRPLANE /

Perfect Pairings

Why these guys love their airplanes

COMPILED BY DAVID TULIS

MEMBERS WHO HAVE a passion for airplanes usually admit to an obsession that has lasted for years. Once you've owned an airplane, you can never go back. I completely agree! ■ *david.tulis@aopa.org*

Bob Bement with his Cessna 182 in Smiley Creek, Idaho (above); Ed Tropper and his Van's RV–4 (below); Geary Keilman with his Cessna 140 (right); Frank Smythe and his Baron (far right); and George Brown with his Baron (below right).

1959 CESSNA 182B

I am a 90-year-old pilot and a member of AOPA since 1982. I bought this 1959 Cessna 182B in 1992 and it took me three years to finally get it flying. Since then, I've logged about 2,900 hours on it and prefer backcountry airstrips in the western U.S. The Cessna 182B is a great airplane. In this picture I'm at a fly-in at Smiley Creek, Idaho.

Bob Bement
Las Vegas, Nevada

VAN'S RV–4

My RV–4 has been flying for 30 years. It's a great flying aircraft that has made me smile for all these years. All who have ridden or flown it have been impressed with its performance. It has an O-360 with a fixed-pitch propeller and cruises in the low 180s at 2,500 rpm. It's a great sports car of the air.

Ed Tropper
Erie, Pennsylvania

1980 BEECHCRAFT BARON B55

It rides like an airliner and handles like a sport plane. My first time at the controls was in a corporate DC–3 in 1950 and I haven't landed yet. After a 337D Skymaster serial twin that my wife, Kitty, and I bought in 1987 and completely refurbished, we moved up to the parallel twin with the Baron 13 years ago. We love the system and power redundancy...and the speed.

George Brown
Georgetown, Texas

Would you like to tell us why you love your airplane?

Send a high-resolution photo and information to pilot@aopa.org subject line WILMA and look for it in an upcoming issue.

1948 CESSNA 140

I have owned my Cessna 140 for 41 years, and it still has some of the original interior and instruments.

Geary Keilman
Las Vegas, Nevada

1974 BEECHCRAFT BARON E55

I'm a Beechcraft person. I started with a 1947 Bonanza for 21 years, then graduated to a 1974 E55 Baron. I use my Baron for work; I'm a traveling salesman for Power Circuit Solutions selling electrical components in the Southeast. Most interesting sale was the main power distribution box for the Cirrus Vision Jet. Isn't life a Beech.

Frank S. Smythe
Simpsonville, South Carolina

COOL HANGARS /

A galaxy far, far away

'Star Wars' theme in the first commercial astronaut's hangar

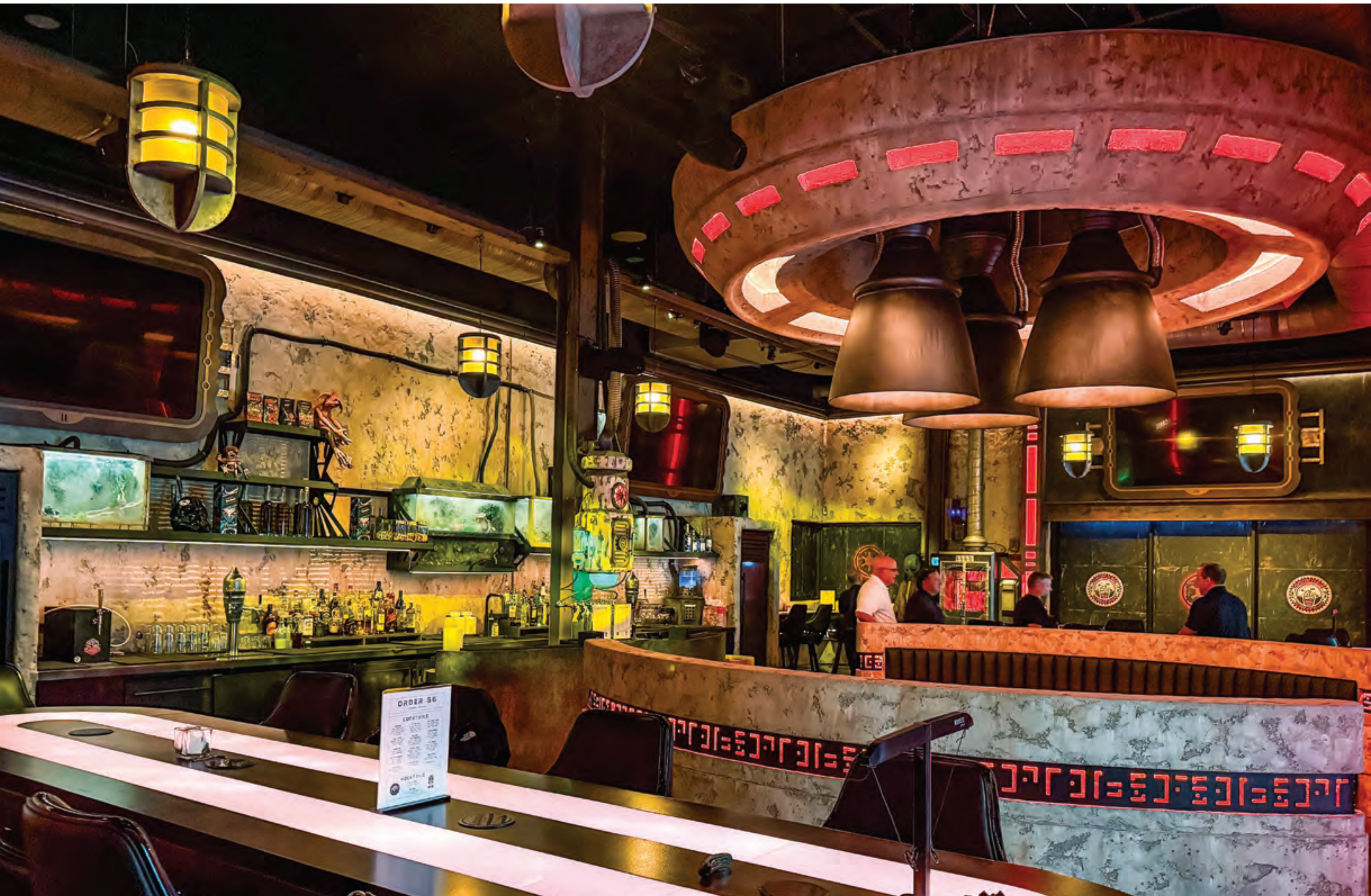
BY JULIE SUMMERS WALKER

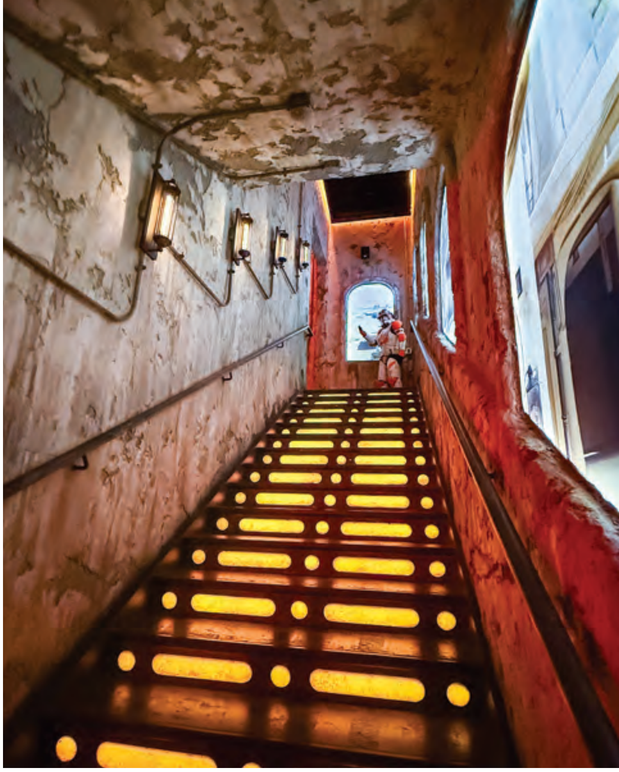
WHO WOULDN'T WANT to visit the Mos Eisley Cantina, the drinking hole on the remote planet of Tatooine, populated by a wild assortment of aliens, as depicted in the *Star Wars* movies? Jedi master Obi-Wan Kenobi described it as a "wretched hive of scum and villainy." In a Bozeman, Montana, hangar "space enthusiast" (his words and an understatement) Jared Isaacman—the first commercial astronaut—has constructed a replica of the cantina from his favorite movies. From the entryway, which appears like the opening crawl of the movies, to the dimly lit cantina, Darth Vader's mask to a quiver of lightsabers and the Bith musicians playing the Kloo horns, Isaacman's homage to the *Star Wars* empire is a kick. Everything was custom made for the hangar. Isaacman said he "contracted with some folks from Disney who had worked on previous *Star Wars* projects." And it overlooks Isaacman's massive hangar that houses his seven fighter jets. And how to let light into the shadowy cantina and view the aircraft in the hangar? With the flick of a lightsaber, of course. ▪

julie.walker@aopa.org

CHRIS ROSE

The famous cantina from the *Star Wars* movies is recreated (below); Bith musicians (above); a collection of lightsabers (right); the entrance to the cantina (far right), which overlooks the hangar (bottom right).





MUSEUMS /

EDWIN REMSBERG

Britain's Shuttleworth Collection

Grab a pint at the local pub and talk airplanes

BY EDWIN REMSBERG

THE SHUTTLEWORTH COLLECTION, just north of London, should be a bucket list destination for any aviation enthusiast. Not only is it home to the world's oldest flying aircraft (a 1909 Blériot XI), but it is almost entirely a flying collection of operational aircraft dating from 1909 to about 1950 that are regularly flown from the grass strip in front of the museum. Everything from the Bristol Boxkite to the de Havilland DH.88 Comet is there and they all fly.

The museum started as a private collection in 1928 by aviator and race car driver Richard Shuttleworth. The Shuttleworth family had long manufactured steam engines and agricultural equipment and during World War I the factories were put to use building the Sopwith Triplane and Sopwith Camel. Years later when the collection built a replica triplane, Thomas Sopwith himself declared it a "late production model." After Richard Shuttleworth was killed in a World War II training accident, his mother formed the Richard Ormonde Shuttleworth Remembrance Trust "for the teaching of the science and practice of aviation and of afforestation and agriculture." In addition to airplanes, the museum features historical agricultural and steam exhibits, classic cars, motorcycles, bicycles, vintage buses, and carriages.

There is also a small agricultural college on the property as part of the trust, ornate Swiss gardens, and an Edwardian mansion. Visitors can stay in the mansion's annex, which functions as an inn and conference center for the college, and although the accommodations are somewhat plain, they are only steps from the runway.

Shuttleworth is not just a place to look at airplanes, it is also a place to fly them. The 70-year-old Cambridge Flying Group, based at Old Warden, offers everything from sightseeing tours to primary training in their two World War II Tiger Moth biplanes. Both saw service during the war and G-AOEI is one of only two remaining airworthy aircraft from the Battle of Dunkirk. To fly such historic aircraft over the landscape where history was made is a spine-tingling experience. CFG flight instructor Bob Morcom gave me a tour over some of the local disused Allied airfields in the Moth when a Spitfire just appeared off our right wing. It is not the sort of experience you have every day!

On any given day you will also find an assortment of privately owned vintage aircraft visiting the aerodrome from all over the U.K.

But the best part of the visit is the chance to talk to the pilots. Visit the local pub and you will run into people like Stu Goldspink, considered one of the best early warbird pilots on the planet; he has flown every single airworthy Hawker Hurricane. Grab a pint and talk airplanes for a while. Bob Morcom flies as a demonstration pilot for the collection as well. He explained that you have to be invited to join that elite group and it is a demanding position. It may take years to get checked out in some of the aircraft "them that ask don't get." You must prove yourself first. Morcom can describe the characteristics of a given aircraft like a sommelier describes a wine.

Visit during one of the many airshows and events they host and see for yourself. ▪

Edwin Remsberg is a professional photographer, pilot, and offers tours of aviation and photography sites throughout the world.

▶ **shuttleworth.org**

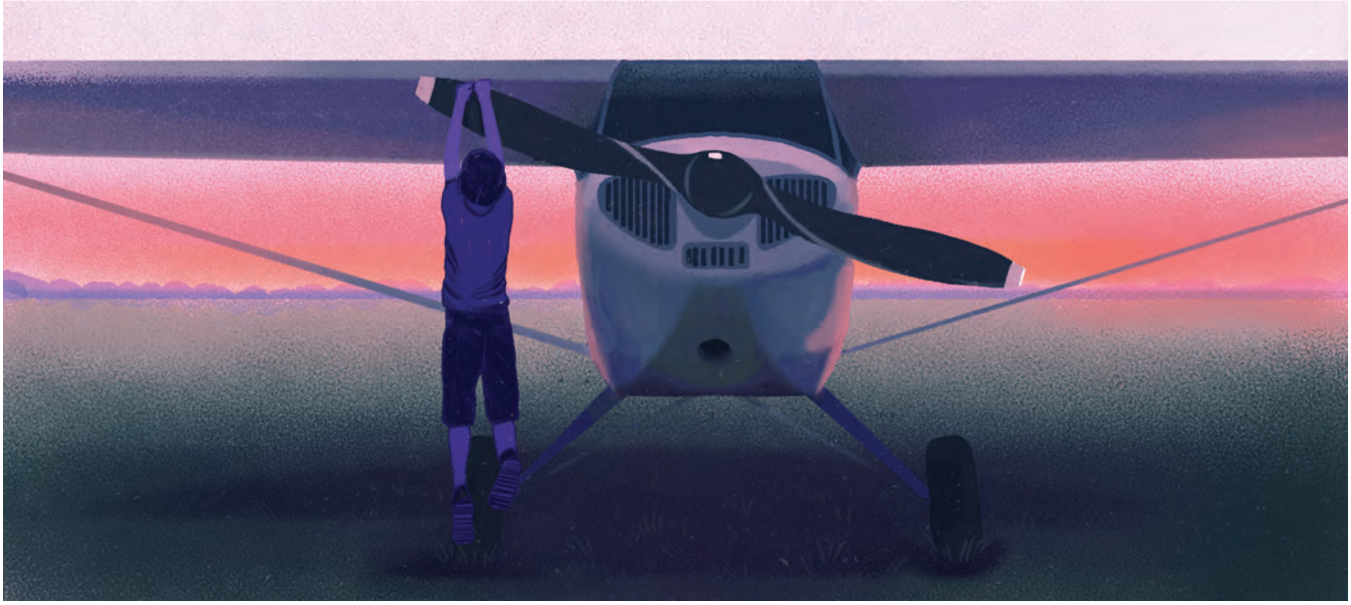
D1951

G-AEBJ
1912 Blackburn Monoplane
The world's oldest airworthy British aircraft

G-AHIZ
6946
G-AOEI

28

MUSINGS /



MARCIN WOLSKI

Hand-propping a Taylorcraft

Or how the 'airport brat' did good

BY KEITH BROWNING SR.

TIME MOVES SO fast now, it's hard to hold onto those childhood summers, which stretched on forever, like lazy rivers winding through endless days. Being the youngest of three brothers, I spent those summers chasing shadows—specifically, the shadows of my older brothers. They were bigger, stronger, faster, and infinitely cooler in my eyes. And I? I was the tagalong, the perpetual underdog, and, as my brothers loved to remind me, a gigantic pain in their rear ends.

I wanted nothing more than to be like them, to be their equal—or at least to prove I wasn't the runt of the litter. That desperate need to measure up put me on a crash course with fate, although it would take years before I fully understood just how close to the edge I'd danced.

It was sometime in the summer of 1981 or maybe 1982. Those exact details blur now, but what I do remember vividly is the boredom. Summers at the rural Allendale County Airport (AQX), Browning Aviation could be magical, sure, but they could also stretch out into a monotony so deep it felt suffocating. That boredom drove me to the edge of mischief, and on this particular day, it led me to our 1946 Taylorcraft.

The Taylorcraft was a beautiful, old-school piece of aviation: wood, fabric, and pure nostalgia in a taildragger frame. It was simplicity itself. No electrical system, no bells or whistles—just a basic engine, a stick, and wings. And because it lacked an electrical system, starting it meant hand-propping the engine.

I was all of 11 or 12 at the time, and with no one around to tell me otherwise, I decided I'd try propping it myself. It was an exhilarating mix of stupidity and adrenaline. The first pull on the propeller blade sent a shiver up my arms, a jolt that felt like the universe waking up. After a few more tries, the engine roared to life—a sound so beautiful and primal it nearly brought tears to my eyes. I felt like a god. Or maybe an idiot. But mostly, I felt alive.

That was the first of many such clandestine adventures. To my knowledge, neither Mom, Dad, nor my brothers ever found out what I was doing. It was my secret rebellion, my private rite of passage. Miraculously, I never hurt the airplane or myself, although I'm sure I shaved years off my parents' lives without them even knowing it.

Fast forward to the summer of 1989. I was 19 and working at the Hilton Head Airport (HHH), a tiny hub that saw everything from private jets and turboprops to the occasional flying relic. One hot, sticky afternoon, I'd just clocked in for my shift when a call came over the radio: A pilot needed help starting his airplane.

When I got to the tarmac, there it was: a 1946 Taylorcraft, looking like it had been plucked straight out of my childhood. The pilot was an older man, kind and weathered, and clearly in need of assistance. Around us, a small crowd had gathered—corporate pilots, an A&P mechanic, and passengers waiting for their flights. Everyone was gawking, but no one was stepping up.

Here was my chance to prove that all those childhood escapades hadn't been for nothing.

The pilot explained his predicament: No electrical system meant no starter, and no starter meant someone needed to hand-prop the engine. The mechanic looked skeptical, the corporate pilots looked confused, and the passengers looked bored. Then the old man asked, "Does anyone here know how to prop a Taylorcraft?"

I froze for a second, the weight of the moment settling on me. Here was my chance to prove that all those childhood escapades hadn't been for nothing. I raised my hand.

"I can do it."

A murmur went through the crowd. The mechanic shot me a look that practically screamed, *You're gonna get yourself killed, kid.* But the old pilot's eyes lit up. "Well, then," he said, grinning, "let's get her started."

We went through the motions: fuel on, throttle cracked, magnetos hot. I positioned myself at the propeller, just as I'd done so many times before, and gave it a pull. On the first try, the engine sputtered to life, coughing and roaring like a lion waking from a nap.

The crowd erupted in applause. Passengers clapped, corporate pilots shook my hand, and the old man gave me a hearty slap on the back. The mechanic, meanwhile, sulked off, muttering something about amateurs. I didn't care. For one glorious moment, I was the hero of Hilton Head Airport.

That day, I learned a lot about life and about myself. Sometimes the things we do as kids—the reckless, borderline idiotic things—turn out to have value we never could have anticipated. And sometimes, if we're lucky, those old, forgotten skills get a second chance to shine.

As for me? I walked away from that Taylorcraft with a grin that lasted for days, a story I'll tell forever, and just a hint of smug satisfaction that, for once, being the youngest brat had worked in my favor. ■

Keith Browning Sr., from Allendale, South Carolina, is an airport brat who grew up at his family's FBO, Browning Aviation, which inspires his upcoming blog, A Face in the Clouds.

FIRST LOOK /

Savvy for Shops

Mike Busch introduces programs supporting mechanics

BY SARAH DEENER

TARGETING WHAT IT calls "an existential threat to the long-term health of general aviation," Savvy Aviation is launching Savvy for Shops, a suite of programs aimed at supporting and educating GA mechanics. Savvy Aviation founder and CEO Mike Busch said the deepening shortage of qualified GA mechanics has led to increasing delays and downtime, and shops are turning away customers. Savvy for Shops is meant to help mechanics and support more efficient, data-driven maintenance with programs targeted at community, training, and consulting.

"We've been very aircraft owner centric, and what we're trying to do now is to provide help for shops directly, something that we've never done before," said Busch.

Savvy Aviation offers breakdown assistance, data analysis, and other services for owners of GA aircraft, advocating for owners based on a philosophy of data-driven "reliability-centered maintenance." Under Savvy for Shops, ShopTalk will provide a free online forum open to all A&P mechanics and students modeled after Savvy Aviation's private forum for A&P mechanics with inspection authorization. Savvy's team of nearly 50 A&P/IAs will participate in the forum, where mechanics can share knowledge and help one another solve problems. Savvy Certified, the second program under Savvy for Shops, will provide free online training for mechanics with an emphasis on reliability-centered maintenance and minimally invasive techniques. Savvy Aviation plans to earn FAA approval for all modules to qualify for IA renewal credit and shops whose leadership complete a core set of courses will earn a "Savvy Certified" designation.

The final Savvy for Shops program is Powered by Savvy, a subscription consulting service modeled after the SavvyQA plan for aircraft owners. Under Powered by Savvy, Savvy Aviation's IAs, analysts, and subject matter specialists will provide advice, troubleshooting, and second opinions. Savvy will analyze engine monitor data, borescope images, and oil reports; assist with sourcing parts; and create troubleshooting plans for participating shops.

Manager of Breakdown Assistance Colleen Sterling will lead the Savvy for Shops effort. (Busch, a monthly *AOPA Pilot* contributor, and Sterling co-host AOPA's *Ask the A&Ps* podcast with Savvy Aviation account manager Paul New.) Busch said the programs will roll out by the end of the year, starting with ShopTalk and proceeding to the training and consulting initiatives. Pricing will be announced in Savvy Aviation's newsletter. ■ *sarah.deener@aopa.org*

MEMBERSHIP /

CHRIS ROSE

Buying an aircraft?

Lean into AOPA for the best experience

MEMBERS SOMETIMES FORGET the many benefits that come with AOPA membership, especially when it comes to purchasing an airplane.

First, members get access to our financing services, as well as all the other services associated with purchasing an aircraft. Those include title and escrow, insurance, Pilot Protection Services, and the AOPA Pilot Information Center.

Title and escrow is a critical part of financing. That's why AOPA has a strategic partnership with Aero-Space Reports, a third-party company that offers service discounts to AOPA members. Aero-Space Reports will do a title search and file the FAA paperwork and handle the funds transfer on the day of closing.

Insuring the aircraft is a prerequisite to lending because lenders use the aircraft as collateral. And since the borrower must list the lender as the loss payee on the certificate of insurance, all lenders mandate a full coverage policy on the aircraft. AOPA has a long-standing strategic partnership with AssuredPartners Aerospace, an insurance broker that has relationships with all the major aircraft insurance providers. That gives AssuredPartners the ability to find the best insurance option for your situation. As an AOPA member, you can request free, no-obligation quotes.

AssuredPartners Aerospace is familiar with navigating the requirements that lenders have for aviation insurance policies, requirements like "breach of warranty" coverage. Breach of warranty coverage extends coverage to the lienholder in case your insurance policy terms were breached. For example, an unapproved pilot flies your aircraft and has an accident. Your insurance carrier could deny coverage based on breaching the pilot warranty.

Another AOPA member benefit is our Pilot Protection Services (PPS). There are two membership levels, basic and plus. PPS Basic is designed for student, sport, and private pilots. Included with PPS is the AOPA Legal Services Plan. The plan provides one hour of paid legal representation by an AOPA panel attorney (or limited reimbursement of some legal fees when using an attorney who isn't on our panel) for aircraft transactions, in addition to benefits for other legal matters, like FAA enforcement actions and aircraft accidents.

PPS Plus is geared toward airline transport and commercial pilots, CFIs, and UAS Part 107 pilots. But it's also available to student, sport, and private pilots seeking additional benefits. This level of support provides up to two hours of paid legal representation by an AOPA panel attorney for aircraft transactions, and benefits for other legal matters.

AOPA's legal team also provides resources like a draft of a sample purchase agreement. It's a great resource to start with to craft your specific purchase agreement. And again, AOPA panel attorneys are available to assist in drafting the agreement.

Another benefit of having access to our panel attorneys is that they may be able to review the ownership structure of the aircraft. For example, you may be planning to put your airplane into an LLC. There are some considerations to make in terms of how the FAA is going to view that LLC and your ownership of the airplane through that LLC.

Last, but certainly not least, as an AOPA member, you have access to the AOPA Pilot Information Center. It's staffed by a team of commercial-rated pilots. They have decades of experience in all kinds of different aircraft. They're a treasure trove of information regarding aircraft operations and aircraft capabilities, and they can help in identifying the right aircraft to meet your mission. If you want to talk to someone who knows about how FAA regulations might apply to you, if you're interested in co-ownership or flying club options, or if you have questions about maintenance, the staff at the AOPA Pilot Information Center can help. ▪

AOPA 2025

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Darren Pleasance is Touring the U.S.—Find an Event Near You!

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- **BEND, OR (BDN)** 6/21/25
- **WICHITA, KS (AAO)** 7/13/25
- **OSHKOSH, WI (OSH)** 7/23/25
- **AKRON, OH (AKR)** 8/16/25
- **DENVER, CO (BJC)** 8/23/25
- **DALLAS, TX (RBD)** 9/6/25
- **WOODRUFF, SC (SC00)** 9/27/25
- **NASHVILLE, TN (XNX)** 9/28/25
- **LIVERMORE, CA (LVK)** 10/12/25
- **INDIANAPOLIS, IN (TYQ)** 11/15/25

Get inspired by AOPA's new President, Darren Pleasance, as he shares his vision for the future of General Aviation and the path ahead for AOPA. Learn how we're working to preserve your freedom to fly, support the aviation community, and spark the next generation of pilots. **aopa.org/presidentstour**

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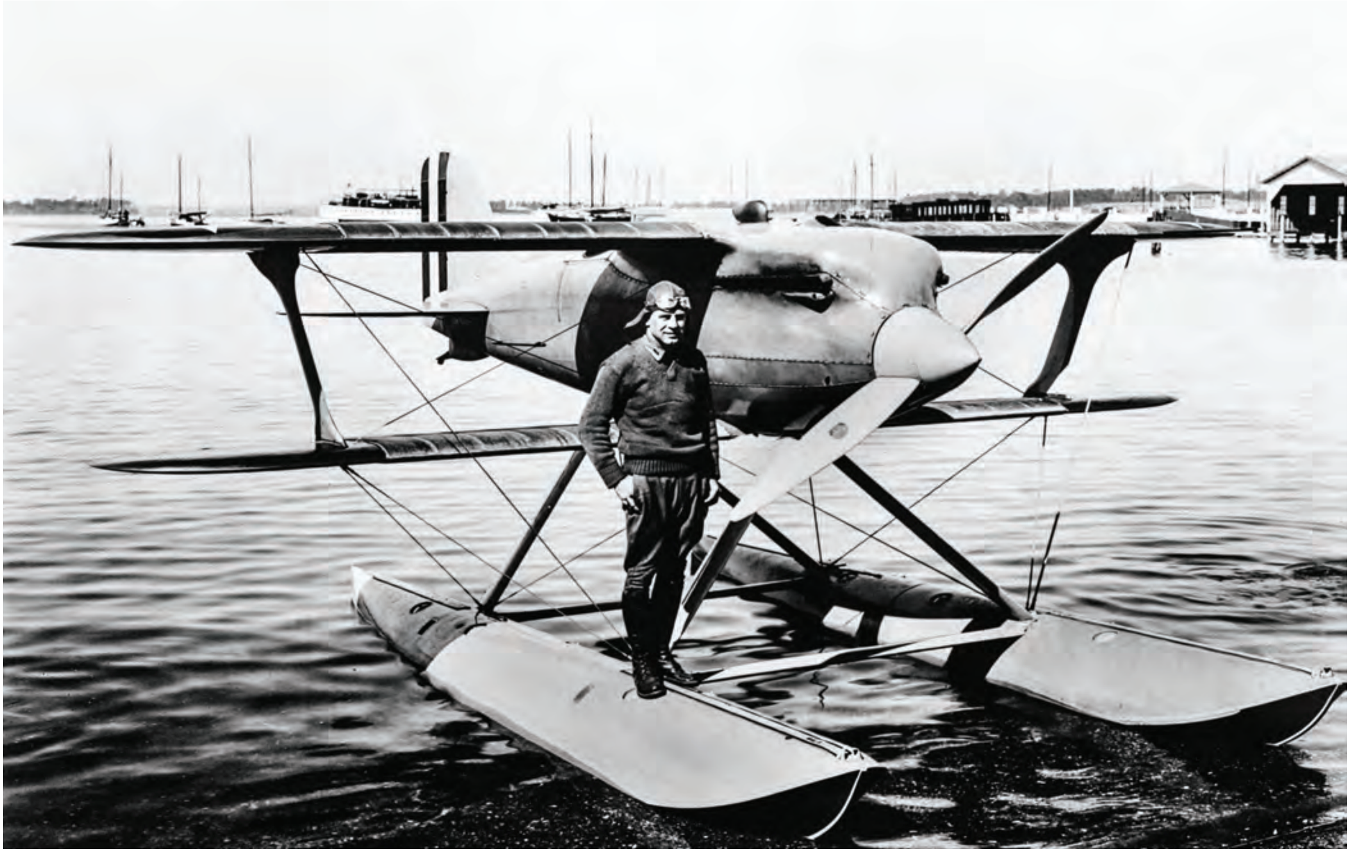
AVIATION HISTORY /

Doolittle's day

The United States wins the 1925 Schneider Trophy

BY PAUL HARGITT



NASA ON THE COMMONS

IN 1925, the world was moving fast. Airplanes—once fragile machines made of canvas and wood—had become symbols of national pride and technological achievement. The Schneider Trophy, a prestigious international seaplane race held that year in Baltimore, Maryland, was where nations competed to rule the skies.

The United States hadn't yet claimed that title. Previous races had been dominated by the British, French, and Italians, but in 1925, the U.S. had a young Army pilot named Jimmy Doolittle.

Doolittle wasn't a big man, but he was sharp and confident. Born in California, he studied engineering and later earned a doctorate in aeronautics from MIT. He also earned a reputation as a fearless test pilot in the Army Air Service, the predecessor to today's U.S. Air Force.

More than most, Doolittle understood airplanes and how to push them to their limits.

For the 1925 Schneider race, the U.S. entered the Curtiss R3C–2, a sleek, single-seat seaplane powered by a 610-horsepower Curtiss V-1400 engine. With its thin wings, long fuselage, and streamlined floats, it was designed to do one thing—fly fast. But it was unforgiving, and only a skilled pilot could push it to the edge.

On October 26, Doolittle took off from the waters of the Chesapeake Bay. The triangular course covered seven laps and 217 miles. He flew low and tight around the pylons, keeping his turns sharp and his speed steady. His average speed: 232 miles per hour, which was astonishing for a seaplane at the time. The U.S. not only won the Schneider Trophy that day, but Doolittle also set a new world record for seaplanes the next day flying 245 miles per hour on a straight course.

It wasn't just a personal victory—it marked a turning point. The U.S. had proven it could compete with the world's best in aviation. And Doolittle had shown how skill, courage, and engineering expertise could stretch the boundaries of flight.

Those who watched understood: the sky was changing. ■

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AOPA™

EVENTS /

1990's
2000's

BEECHCRAFT HERITAGE MUSEUM

Celebrating ‘American Aviation’

Annual Beech Party features new exhibit

BY JULIE SUMMERS WALKER

FOR MORE THAN 50 years the Beechcraft Heritage Museum at Tullahoma Regional Airport/William Northern Field (THA) has celebrated all things Beechcraft. At its annual “Beech Party” October 9 through 11 this year, the museum will hold a ribbon-cutting ceremony for its new “American Aviation History” exhibit.

“It’s time to tell not only the Beechcraft story, but our American aviation history story beginning in 1891 with the birth of Walter Beech in Pulaski, Tennessee,” said Jody Curtis, executive vice president. “We will have six 8-feet by 5-feet panels depicting our history, including the beginning of the Travel Air Company, the Beech Aircraft Company, the life and accomplishments of Louis Thaden, the Staggerwing Foundation, the genealogy of Beechcraft, and our Heritage Museum.”

The Beechcraft Heritage Museum was originally founded as the Staggerwing Museum Foundation in 1973 and became the Beechcraft Heritage Museum in 2007. John and Charlotte Parish donated the land near their farm and the airport for what would become the campus-like setting of the museum. Its 60,000 square feet of aviation memorabilia and aircraft is lovingly maintained by the Parish family, with son Charles Parish as its president. From the gleaming hardwood floors in the lobby to its artful and thoughtful exhibits, the polished-to-perfection Beech 18 and the gleaming red G17S Staggerwing, the Beechcraft Heritage Museum is a treasure.

Multiple hangars house 37 significant aircraft including the first Staggerwing produced, serial number 1. Although some of the historic aircraft still fly, most of the restored airplanes gleam in show-stopping displays throughout the museum. The Staggerwing is called the Cadillac of the Sky for good reason; it debuted in 1932 and was designed for high-speed, luxurious travel. It is one of the most iconic airplanes ever built. Many of its pilots had an affection for the aircraft and established The Staggerwing Club, which later became the Staggerwing Museum Foundation and then the Beechcraft Heritage Museum. John and Charlotte Parish donated the land near their farm and the airport for what would become the campus-like setting of the Beechcraft Heritage Museum.

The ribbon-cutting for the new exhibit will take place on Friday, October 10.

“Our museum has gone beyond being the vault of the Beechcraft brand to being a rich part of our American aviation history,” said Curtis. ■

julie.walker@aopa.org

▶ **beechcrafthm.org**

Visiting THA

On 775 acres, Tullahoma Regional Airport/William Northern Field (THA) has four runways (two paved, two turf), more than 170 based aircraft, and 30,000 flight operations each year. Originally Camp Forrest, a World War II training facility, pilots were taught to fly the B–24 Liberator here. Camp Forrest became a prisoner of war camp, and both Camp Forrest and William Northern Field were declared surplus after the war. Arnold Air Force Base was established on nearby land in 1950 as an engineering development center named for Gen. Henry “Hap” Arnold. Three-time Tullahoma mayor John W. Harton Sr. saw the town’s decision not to buy the surplus William Northern Field as a mistake and purchased the land himself, believing the future of Tullahoma depended on a regional airport. His foresight ensured Tullahoma would have this exemplary general aviation airport there today.

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AIRCRAFT /

'A neat little package'

The Spirit SE–1 from Spirit Engineering in Colorado was a highlight on the flight line at EAA AirVenture.

LSA maker says his new aircraft is 'eye candy'

BY KOLLIN STAGNITO

THE SPIRIT SE–1, a new, visually stunning light sport aircraft, unexpectedly appeared at EAA AirVenture 2025, and Spirit Engineering president and CEO Steve Wood was beaming.

He had just pulled off the surprise of the show by flying not one, but four production aircraft from Grand Junction, Colorado to Oshkosh, Wisconsin.

Although Wood and his team had been quietly developing the SE–1 over the past decade, the final production version began to take shape in October of 2024, and Spirit Engineering received its special light sport aircraft (SLSA) certificate to produce the SE–1 just a few weeks before AirVenture.

"We came here unannounced, very, very intentionally," said Wood. "We're not going to be here with something that hasn't flown, that's not designed yet. Flapping our jaw about what the performance is going to be or how great it's going to be. We're going to stay home in the store, and we'll show up when we're done developing the airplane and the engine. And, here we are."

The airplane will take off in 500 feet weighing 740 pounds at sea level on a standard day with an initial climb rate of 750 feet per minute and a cruise speed just over 100 miles per hour.

More impressive is that Spirit Engineering also designed the inverted V-twin engine that powers the SE–1.

"This is a neat little package that makes a lot of power," Wood said. "It's not as wide [as an inline boxer engine], so it streamlines nicely as you can plainly see. And it has one other thing that we felt was important: man, it sounds cool. No one will mistake the sound of this engine for anything else."

The Spirit V2 engine develops 42 horsepower at 3,000 rpm and burns two gallons per hour at cruise. With a fuel capacity of eight gallons, the SE–1 has a no-reserve endurance and range of four hours and 400 miles.

The SE–1 is a light single-place airplane weighing in at a mere 440 pounds empty. Its gross weight of 740 pounds affords a 300-pound useful load, but that's plenty considering there is little room for baggage. The aircraft was not designed for cross-country travel, but rather for recreation.

DAVID TULIS

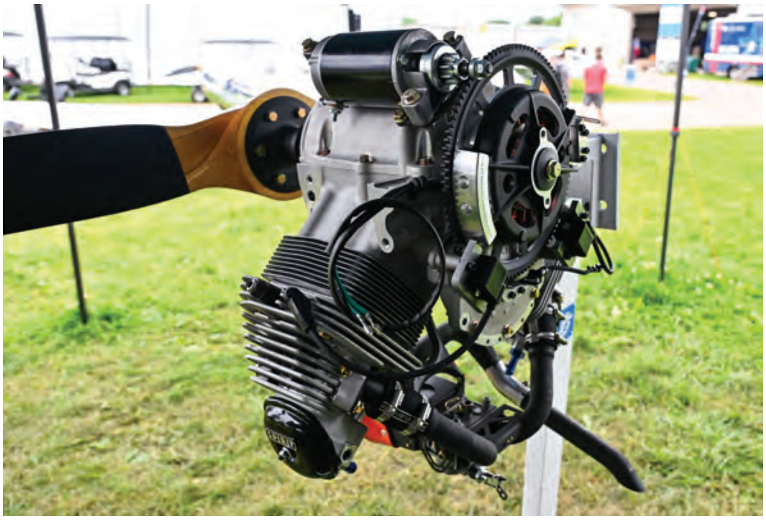
N38SE
Look but PLEASE DO NOT TOUCH This Aircraft!
STARR

"We designed the airplane with an expectation that people would love it because it's pretty," said Wood. "People come around the corner, they see the airplane for the first time, they're drawn to it like moths to flame because it's eye candy. It's shiny."

A unique feature of the SE–1 is its folding wings, intended to reduce the cost of ownership by enabling an owner to store the aircraft in a garage or enclosed car trailer.

Another uncommon feature—particularly on a light sport aircraft—is its trailing link main landing gear. Wood provided three reasons for using this configuration on the SE–1. "One reason is a trailing arm gives you the effective wheel diameter that's a lot bigger than your actual wheel diameter," he said. "A trailing arm gear is the only gear that deflects from stubbing its toe; if you run into an obstruction, the wheel goes up with enough load." The third reason is that this set up will make it easier for Spirit Engineering to create a nosewheel version of the SE–1 in the future.

Since the Spirit SE–1 is a single-seat tailwheel airplane, it requires appropriate tailwheel experience to fly for the first time. "Landing is pretty conventional," said Wood. "A lot of people have asked me what sort of transition do I need to be able to fly? As a single seat airplane, here's my pat answer so far: Show me three good landings in a Luscombe, and you will not bat an eye flying this airplane."



Spirit Engineering designed the inverted V-twin engine on the Spirit SE–1.

DAVID TULIS

The Spirit SE–1 will be sold ready to fly with a starting price of $69,500, which includes a com radio. Deliveries are expected to begin this fall. A transponder with ADS-B Out; landing, taxi, navigation and strobe lights; and an attitude and heading reference system (AHRS) with artificial horizon and turn and bank indicator will be offered as optional equipment.

Wood said Spirit Engineering is prepared to meet market demand for the SE–1. "There's no fiberglass. There's no composite. That makes it seem like a little bit of a throwback, but it's designed to be produced in volume. We have inventory that can be completed fairly quickly, and we're pretty confident that we need to be at a pretty brisk build rate." ■

kollin.stagnito@aopa.org

▶ **spiriteng.com**

DESTINATIONS /

Earth & Fire
ART GALLERY

Starlight THEATRE

Sunshine & Champs
Don't Touch The Glass!

Calling all chili heads

Visit Terlingua, Texas, this November

BY JULIE SUMMERS WALKER

From art galleries to interesting restaurants, Terlingua offers an eclectic assortment of things to do in this West Texas town. The views from your GA aircraft are sure to please.

IT'S NOT EASY to get here, although a magic carpet like a general aviation aircraft can get you close. If you're a chili head, you probably already know about Terlingua, Texas, also known as the Chili Capital of the World. Since 1967, this old mining town in far West Texas has hosted an annual chili cookoff on the second Saturday in November. It started with a feud between food columnists who eventually formed the Chili Appreciation Society. More than 10,000 people gather in Terlingua for the annual Frank X Tolbert/Wick Fowler International Championship Chili Cook-Off. Situated under the Chisos Mountains in the Chihuahuan Desert, Terlingua was originally a thriving town dependent on the cinnabar ore mined in the mountains (cinnabar creates liquid mercury). The Chisos Mining Co. operated here until the Great Depression, and when it quit the town, Terlingua essentially became a ghost

REBECCA BOONE

Getting there

Lajitas International Airport (T89)
Privately owned, public access

14 miles from Terlingua; charter service for Lajitas Golf Resort

Runway: 6,500 feet x 100 feet

432-424-5000

Other nearby airports (by Texas standards) are Big Bend Ranch State Park Airport (3T9) about 20 miles west; Alpine-Casparis Municipal Airport (E38), 66 miles north; Marfa Municipal Airport (MRF), 68 miles north. Midland International Airport (MAF) is 260 miles east.

town. And that's what you'll find today: a ghost town with its crumbling buildings, an interesting cemetery with historic markers dating back to the early 1900s as well as modern-day tributes, a one-stop general store, and several restaurants offering everything from Tex-Mex to ice cream. The Big Bend National Park and Big Bend Ranch State Park offer 800,000 acres for hiking, mountain biking, and motorcycle touring (there are 100 miles of paved road through the parks). "Big Bend" refers to the bend in the Rio Grande where this desert oasis is located. The area is an International Dark Sky community where stargazing is a gorgeous phenomenon. There's no better place to stargaze than from the huts at The Summit, a resort near the Lajitas Airport (T89) owned by Cirrus pilot Brent Pickette (see "Star Struck," October 2024 *AOPA Pilot*). ■

julie.walker@aopa.org

LEFT: REBECCA BOONE; RIGHT: JOHN UELAND

Test Pilot /

BY BARRY SCHIFF

1 From reader Sandy Bredin: What was the fastest piston-powered airplane of World War II?

2 True or false? The original purpose of safety belts in airplanes was to prevent pilots from falling or being thrown out of their aircraft.

3 In the 1991 video series, *First Flights*, Neil Armstrong said that three technical problems had to be solved before the Wright brothers could achieve flight in an airplane. Can you name them?

4 The world record for the largest animal ever transported by air involved a(an)

A. elephant.

B. hippopotamus.

C. killer whale.

D. rhinoceros.

5 During World War II, several airports were constructed in Greenland to provide en route landing and refueling facilities between North America and Europe. Can you name the two such airports that are still in operation?

6 Why does landing a floatplane on water frequently stress the airframe more than landing the same airplane with wheels on a hard-surface runway?

7 From reader George Shanks: True or false? All reciprocating (piston) aircraft engines are air cooled.

8 Air traffic controllers often use the expression "souls on board" when asking for the number of people aboard an aircraft in distress. How did this expression originate?

See Answers on p.56

POSTCARDS /

Flying Ace Farm

Distillery is a homage to a World War II pilot

BY JULIE SUMMERS WALKER

ON A 200-YEAR-OLD farm in the rolling hills of Lovettsville, Virginia, just an hour outside Washington, D.C. and a 20-minute drive from AOPA headquarters in Frederick, Maryland, is a brewery/distillery/barbecue restaurant that quietly pays homage to a World War II flying ace in the owner's family. A scale replica of a Corsair and the aviation-themed logos on the bottles of spirits and beers are the farm-to-bottle products of Flying Ace Farm. The farm has produced an unusual type of corn for many years. "Bloody Butcher" corn is an artisan heirloom product so-called because of its intense red kernels. It has a higher protein and lower starch content than traditional corn products and combined with malted barley and wheat produces a fruity flavored bourbon with undertones of banana bread and kettle corn in the American Ace Bourbon the farm produces. They lay claim that it's a "bloody good bourbon." It has won World Whiskies Awards several years in a row. Flying Ace Farm also brews beer, including Flying High Hefeweizen and Pilots Pilsner. The site is open for weddings, trivia nights, and live music. With views of nearby Furnace Mountain and barbecue provided by Monks on the Farm, this is a great place for a fall outing. ■

julie.walker@aopa.org

▶ **flyingacefarm.com**

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The bourbon distilled at Flying Ace Farm is award-winning; the farm is named for one of the owners' relatives who flew a Corsair in World War II.

CHRIS ROSE

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BOOKSHELF /

DREAMS, VINTAGE PLANES & BLESSINGS
STEVE HAWLEY

Blessings found along the way

Dreams, Vintage Planes & Blessings

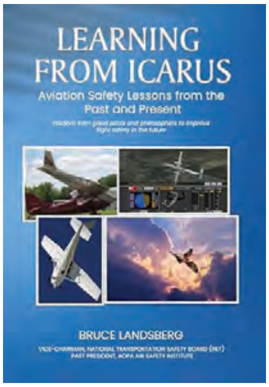
IN "DREAMS, VINTAGE *Planes & Blessings,"* Steve Hawley takes readers on a journey through a lifetime shaped by flight. This collection of short stories traces his deep connection with aviation, from his earliest flying experiences to his current project—restoring his twenty-ninth airplane. But this book is more than just tales of aircraft and engines; it's a celebration of the way aviation has intersected with the most meaningful parts of Hawley's life. With warmth and sincerity, he shares stories of the sky that are rich with nostalgia, humor, and personal insight. He recounts how aviation even played a role in meeting his wife, weaving the thread of flight through both the extraordinary and everyday moments. His writing feels like a conversation in a hangar, full of wonder, grit, and love for the craft. *Dreams, Vintage Planes & Blessings* will resonate with aviation enthusiasts and anyone who appreciates stories of passion, perseverance, and the blessings found along the way.—*Paul Hargitt*

RESCUING DOC
HOW TONY MAZZOLINI AND DOC'S FRIENDS TRANSFORMED THE LAST RESTORABLE B-29 FROM A FORGOTTEN TARGET INTO A FLYING TRIBUTE
DAVE FRANSON

Rescue, restoration, and remembrance

Rescuing Doc

"RESCUING DOC" TELLS the true story of how one man's vision and a team's perseverance brought a forgotten World War II bomber back to life. In this compelling account, author Dave Franson chronicles Tony Mazzolini's decades-long mission to rescue *Doc*, a B–29 Superfortress left to deteriorate as a target on a remote weapons range. Franson captures the emotional and logistical challenges Mazzolini and his team faced, from locating and recovering the aircraft to navigating the immense technical and bureaucratic hurdles of a full restoration. What emerges is not just the story of an airplane, but of the community of volunteers, veterans, and aviation lovers who came together to honor history. With vivid detail and deep admiration, *Rescuing Doc* is both an inspiring tribute to American aviation heritage and a testament to the power of passion and persistence. A must-read for warbird enthusiasts and anyone moved by stories of rescue, restoration, and remembrance.—*PH*



'Mr. Safety' pens his book

Learning from Icarus

"THIS IS BOTH the ultimate act of hubris and vulnerability. It's also a chance to give something back to this wonderful activity that I've been so privileged to enjoy," says author Bruce Landsberg of his book *Learning from Icarus: Timeless Aviation Safety Lessons from the Past and Guidance for the Future.* In the book just released on Amazon and available at Barnes and Noble bookstores, the former AOPA Air Safety Institute president and NTSB vice chairman has compiled aviation safety lessons from his years of instructing, analyzing, and investigating aviation. Readers will gain insight from a comprehensive review of aviation safety crashes including airline, corporate, and GA, featuring more than 200 color illustrations, and 40 case studies. In several events, detailed cockpit voice recorder transcripts help the reader understand the accident pilots' mindset. "From high-profile accidents to subtle human errors, each chapter dives into the core of what pilots, instructors, and aviation organizations must understand to prevent the next tragedy. With wisdom from legendary pilots, philosophers, and front-line investigations, this book is both a technical resource and a philosophical guide for anyone who takes to the skies," says the author.—*Julie Summers Walker*

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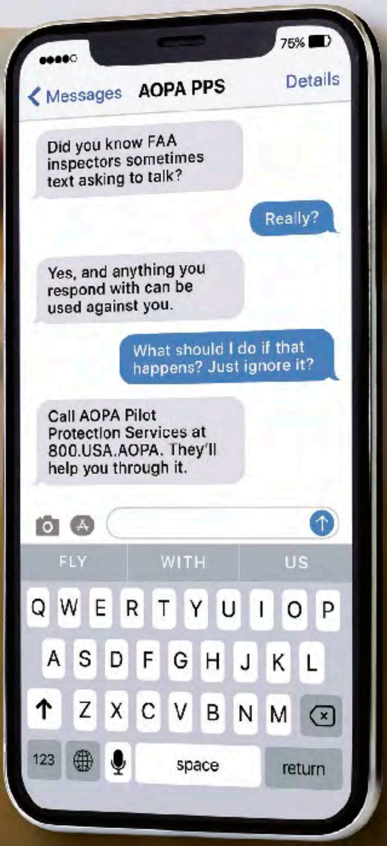

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Test Pilot Answers / from p.51

1 The German Dornier Do 335 Pfeil (Arrow) was a heavy fighter with a top speed of 474 mph. It was a twin-engine airplane with the same push-pull engine configuration as a Cessna Skymaster.

2 True. Safety belts became universally adopted in 1913 following an accident on June 20, 1913, in which naval aviator W.D. Billingsley was thrown out of a Wright hydroplane (seaplane) at an altitude of 1,600 feet agl.

3 The three problems were 1. “how to provide the necessary lift,” 2. “how to give the craft a means of propulsion,” and 3. “how at the same time to establish a system of control” (i.e., lift, thrust, and control).

4 The correct answer is C. This occurred in September 1998 when Keiko, the 40,000-pound star of *Free Willy*, was transported by the U.S. Air Force in a modified McDonnell Douglas C-17 Globemaster III from Newport, Oregon, to his new home in Iceland.

5 Narsarsuaq (code-named Bluie West One) is on the southwest coast of Greenland and at the end of a fabled fjord. It has been popular with pilots ferrying light airplanes across the North Atlantic. Farther north is Sondestrom Air Base (Bluie West Eight), now known as Kangerlussuaq Airport.

6 Unlike landplanes, seaplanes are not equipped with shock absorbers (such as oleo struts). Landing shocks are transmitted directly to the airframe.

7 True. Engines that are said to be “liquid-cooled” have radiators or heat exchangers that use air to extract heat from the liquid coolant, thus making the engine ultimately cooled by air.

8 It originated with early maritime communications. Some believe that radio operators would refer informally to those in distress as poor “S.O.B.s,” a slang term that was later sanitized as “souls on board.”

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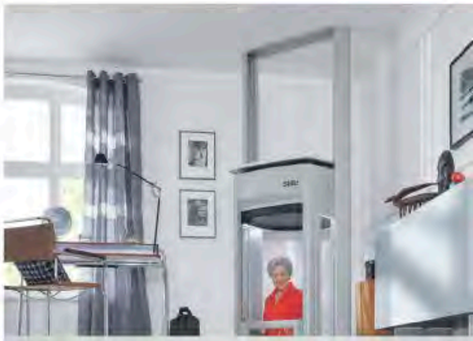
> *– Mr. James, Roanoke, VA*



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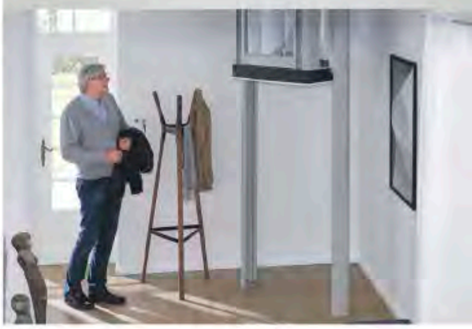

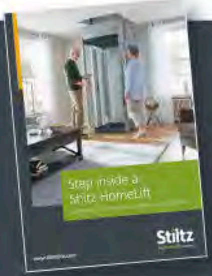

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It's all about the speed

Stylish Risen V-tail offers more than good looks

BY DAVE HIRSCHMAN
PHOTOGRAPHY BY CHRIS ROSE

The stylish Risen SuperVeloce would have received plenty of attention regardless of how it got to the big show. But the fact that the sleek, single-engine European ultralight flew to EAA AirVenture in Oshkosh, Wisconsin, from its home in Italy in 2024 by crossing the Atlantic Ocean made a statement in itself.

PORTO AVIATION GROUP
N367BW
RISEN

With the recently announced FAA rule changes under MOSAIC (Modernization of Special Airworthiness Certification) allowing U.S. sport pilots to fly airplanes equipped with retractable landing gear, variable-pitch propellers, and top speeds well in excess of the current 120-knot light sport aircraft limit, the Risen is now even more compelling.

"We flew across the Atlantic to show that our performance claims about the airplane's speed and fuel efficiency are real," said Alberto Porto, the Risen designer and CEO, who made the 11-hour westbound flight across the Atlantic with friend and fellow pilot Andrea Venturini. "Our numbers are real and verifiable. They're not exaggerations."

At the conclusion of the massive annual aviation gathering, Porto flew the Risen back to Italy. This time, with the aid of a tailwind, the Risen made it from Goose Bay, Canada, to Ireland in nine hours. On those record-setting flights, the Risen's 160-horsepower Rotax 916iS consumed about 4 gallons of fuel per hour at 165 KTAS.

"We could have done a lot better if we'd flown higher," said Porto, an engineer who was born in Argentina and worked in Italy most of his career. "But a combination of clouds, wind, and air traffic controllers kept us at lower altitudes than we'd normally fly in a turbocharged airplane."

My introduction to the Risen takes place in Nephi, Utah. Risen builds complete airplanes at its factory near Milan for European customers. But U.S. buyers who license their airplanes under experimental/amateur-built rules follow a far different path.

"They travel to Milan and work in the factory for about two weeks," said Robert Barnes, U.S. representative for Risen aircraft. "All the structural parts are made with expert supervision from factory employees, and the process is carefully documented."

Risen uses retractable landing gear and a constant-speed propeller to great effect, with an uncompromising approach to gaining speed, range, and flight efficiency.

EMERGENCY PARACHUTE

IDROVARIO
RECORD PROPELLER

Risen designer and CEO Alberto Porto shows his confidence in the airplanes his company builds through extraordinary long-range flights as well as local speed tests. His airplanes include high-quality components such as Garmin digital avionics and Beringer wheels and brakes.

Barnes said the factory building experience is both educational and enjoyable, and northern Italy is a popular destination where visitors will want to spend extra time. Once the airplane is complete, it's disassembled, loaded into a shipping container, and sent to Nephi (pronounced *NEE-figh*).

There, at a nontowered airport about an hour's drive south of Salt Lake City, the owner-built airplanes are reassembled, licensed, and test flown. A factory pilot typically makes the first few test flights to verify performance before the buyer takes over.

Barnes, a former Gulfstream pilot, has owned and flown his own Risen for several years and knows the process well. He's also a flight instructor and patiently guides me through an introductory flight.

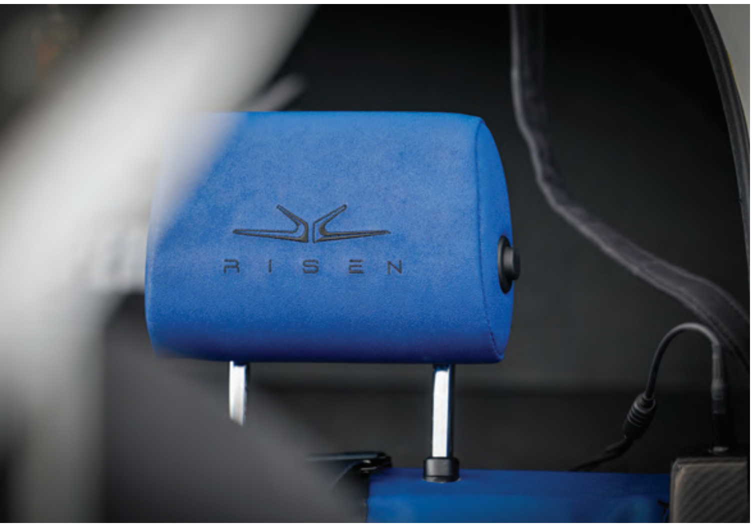
Astonishing performance

My initial impression of the Risen is the most obvious: It's all about speed. From the tight cowl to the angular canopy to the V-tail, Risen has gone to extreme lengths to reduce weight and aerodynamic drag.

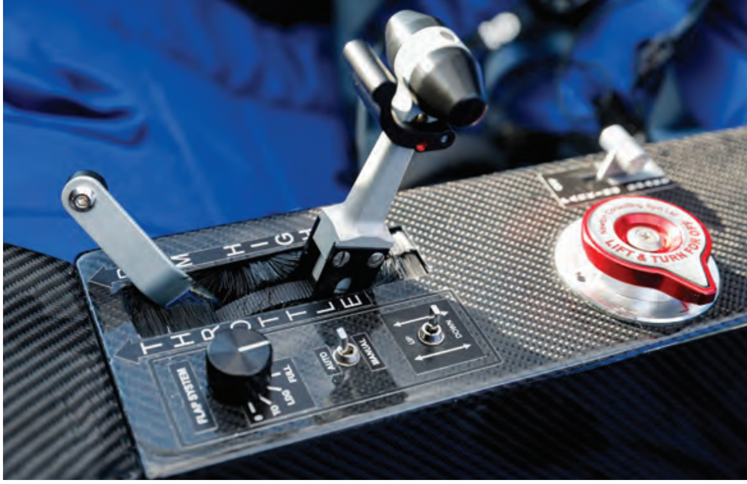
LED landing lights, for example, are attached to the main landing gear struts so that they're tucked away out of the slipstream in flight; composite surfaces are smooth to the touch; control surfaces have minimal gaps, and most of them are sealed; navigation and strobe lights are faired inside clear covers.

The Rotax 916 iS produces a great deal of heat, and the Risen cowl uses unusually small scoops to provide outside air to the oil cooler, turbocharger, and cylinders. The Risen's high cruise speed makes that cooling air especially effective.

The composite wing blends multiple sections to allow it to fly both fast and slow. The swept tips have a trapezoidal shape for high-speed efficiency. The trailing edge has long metal tracks for Fowler flaps capable of extending more than 40 degrees. The combination allows an extraordinarily broad speed range in which the Risen's never exceed speed (205 knots) is almost five times greater than its stall speed of 43 knots.



JUNKERS
STAY CLEAR



That spread gets far greater in terms of true airspeed. At 18,000 feet, for example, the Risen's top speed is 226 knots in level flight.

An electric motor raises and lowers the single-piece canopy and latches on both sides to secure it to the 48-inch-wide flight deck. The IFR-capable instrument panel contains two Garmin G3X primary flight display/multifunction displays, a GTN 750 navigator, audio panel, and a digital Garmin autopilot.

Two floor-mounted control sticks, each with an elevator trim and radio transmit switch, arise from the base of the leather seats. A pedestal-mounted throttle and propeller rpm lever are mounted between the seats along with a fuel selector and electric flap control knob.

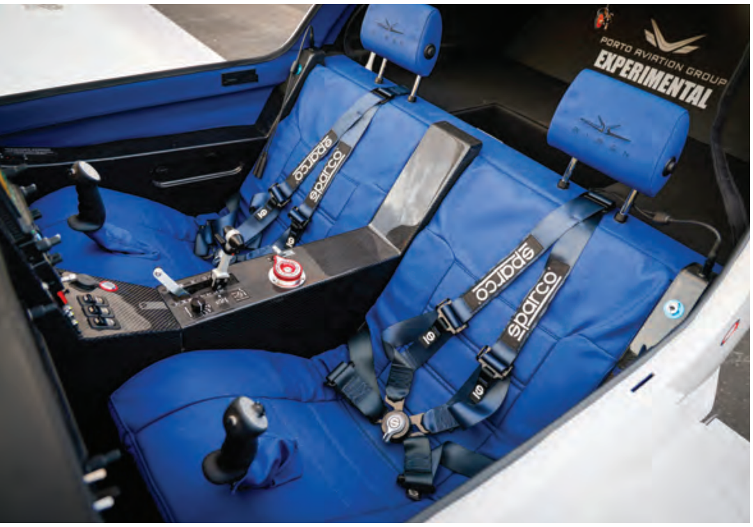
The tricycle landing gear is raised and lowered via an industrial-sized toggle switch at the base of the instrument panel perfectly centered so both occupants can easily reach it. A whole-airframe ballistic parachute is stowed in the upper fuselage just aft of the cockpit. It can be deployed at airspeeds up to 175 knots via an emergency pull handle.

Climbing into the Risen requires preplanning and dexterity. First, sit on the wing, then reach into the airplane and grab a crossbar for support. Step onto the bucket seat and make sure the four-point harness, headset, and kneeboard/iPad are out of the way. Then brace yourself with a hand on the top of the instrument panel and/or cockpit sidewall as you lower yourself down. Once inside, the Risen is remarkably roomy and the bubble canopy accentuates that airiness.

I elect to fly in the right seat because I have an overwhelming desire to fly with the control stick with my right hand and throttle in the left. Any other arrangement seems intolerable, although I realize I'm in the minority, and many more dexterous pilots are happy to manipulate the stick with either hand.

Barnes and I cinch into four-point harnesses, and he lowers the canopy and starts the Rotax. I feel out the Beringer wheels and toe brakes during the quarter-mile taxi to Runway 17.

The two-seat Risen flight deck is 48 inches wide, and the semi-reclined seats are meant to keep occupants comfortable during long-range flights. A ballistic whole-airframe parachute system is standard equipment.



The wind is out of the southwest at 10 knots, airport elevation is 5,022 feet, and the density altitude is about 6,500 feet. Runup is normal for a fuel-injected, turbocharged Rotax and the engine monitor shows no anomalies.

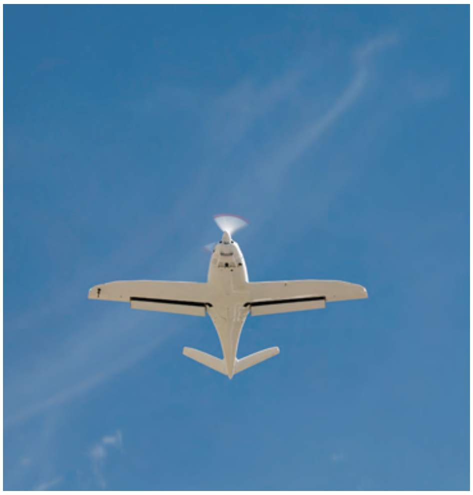
Barnes sets the rotary dial for takeoff flaps and confirms their position visually. I advance the power lever all the way forward and reach the airplane's 60-knot rotation speed in about seven seconds.

Elevator forces are light but not twitchy as I aim for a 10-degree nose-up attitude, then raise the gear and aim for a best-climb speed of 81 knots.

An electric motor takes about five seconds to fold all three landing gear aft and up into the fuselage. I reduce engine power to 44 inches of manifold pressure and engine rpm to 5,400 during a cruise climb at 95 knots.

We level at 7,500 feet and let the airplane smoothly accelerate. Control forces are light and well balanced, and the roll rate is crisp with no noticeable adverse yaw.

I'm curious about slow flight and reduce the power to idle to get down to flap deployment speed. Even with a constant-speed propeller, the Risen is so aerodynamically clean that it's reluctant to slow down. Slowing to the 87-knot flap deployment speed means raising the nose and entering a slight climb.



Once the flaps are partially down, we slow to 70 knots to lower the landing gear, then deploy landing flaps. Aerodynamically dirty, the Risen is willing to descend at 500 feet per minute and idle power without gaining much speed. It's still somewhat slippery, though, and I find myself inadvertently going beyond the 70-knot limit while tracking the visual glideslope on the two-light PAPI.

Barnes counsels carrying some power all the way into ground effect before flaring and I follow his advice. The airplane touches down on the main landing gear slightly right of center, and the nosewheel makes contact a couple seconds later.

Barnes raises the flaps to the takeoff position and I add full engine power for another takeoff. The ruddervators don't provide effective steering on the ground until the airplane reaches about 30 knots, so directional control, especially in a crosswind, requires a touch of brakes. After three circuits, we make a full-stop landing, put the airplane away, and prepare it for a formation photo flight that evening.

Incredible things

My main takeaways from the introductory flight are that the Risen is a thoughtfully designed, highly capable airplane with a clear purpose: flying fast, and far, with astounding efficiency.

That became even clearer on our second flight, an hour-long photography flight along the rocky, 10,000-foot peaks of the Wasatch Mountains. The Risen flew next to a Cessna 210 while AOPA colleagues Chris Rose and Michelle Walker pointed their cameras out the photo windows.

During the flight, Cessna photo pilot Jim Hoddenbach asked about the Risen's fuel consumption while calculating how long we should continue. The hard-for-me-to-believe answer was that the diminutive speedster was only burning three gallons an hour while flying next to the Cessna at 135 KIAS.

MOSAIC rules make the Risen and other high-performance factory-built airplanes widely available to U.S. sport pilots. That will

The Risen is a thoughtfully designed, highly capable airplane with a clear purpose: flying fast, and far, with astounding efficiency.

be a welcomed change. But no-compromise designs like the Risen (or JMB, or Tarragon, or similar models) require more pilot skill than previous U.S. light sport designs.

Their light wing loading and high cruise speeds make them punishing to fly in turbulence. Their ability to fly at high altitudes puts a premium on avoiding icing conditions and other adverse weather. And very low landing gear and flap extension and retraction speeds require thinking ahead with careful descent planning and precise airspeed control. MOSAIC expands sport pilot privileges through additional training and endorsements for things like retractable gear operations.

The Risen is a striking airplane with astonishing performance. It's only got two seats, of course. But it's faster than a normally aspirated Beech Baron and can literally cross an ocean on the amount of fuel a new Cessna 182 can hold in just one wing tank. The Risen isn't for everyone. It requires a knowledgeable, proficient pilot with a deft touch on the controls, solid judgment, and a passion for speed, range, and flight efficiency. But in the right hands, it can do incredible things. ■

dave.hirschman@aopa.org

A distinctive V-tail design is a Risen hallmark that minimizes aerodynamic drag, and it's visible from every angle as well as the company logo. The company's U.S. hangar is in Nephi, Utah, where the aircraft built in Italy are licensed and flown.

MUSIC IN THE AIR

Drew Holcomb flies to perform with his band

BY JULIE SUMMERS WALKER | PHOTOGRAPHY BY DAVID TULIS

Walking up to the craftsman-style home in tree-lined downtown Nashville, there are messages. This is a family home; see the kids' sneakers lined up on the step. This is an easy-like Sunday morning home; see the rocking chairs and cushions on the porch. Inside, this is a poet's home; the walls are lined from floor to ceiling with books. This is a musician's home; guitars and music are part of the décor. This is a pilot's home; framed photographs of family members and their airplanes are on the shelves.

"I grew up around pilots," says singer/songwriter Drew Holcomb. "My great grandfather was a pilot in World War I. He died in an accident in a Lancaster when my grandmother was five. My great grandmother lived five doors down the street from us with my grandmother, so I grew up hearing stories about him and seeing photos of him. She loved to talk about her beloved Chuck, much of it was aviation related. And on my father's side, my grandfather flew in World War II. My mom had a cousin who was a pilot and took me up when I was young. It's in the blood."

Drew Holcomb prepares to fly his Cirrus SR20 to Alton, Illinois. Adam Davis, Rich Brinsfield, Nathan Dugger, Holcomb, Will Sayles, Ian Miller, Seth Talley, and Ryan DeLange in the trailer as they get ready for the Mississippi River Festival in Alton. Family photographs in Holcomb's home honor his aviation family background.

SHINE LIKE LIGHTNING

"Even when the rain pours down
Even when the light seems like it's fading
Even when your heart aches,
feels like it's gonna break
That's when you sing out loud."

Holcomb learned to fly in college. He'd considered the Naval Academy as his grandfather had flown in the U.S. Navy, but when he was offered a scholarship to the University of Tennessee, his father said he'd pay for flying lessons if Holcomb took the scholarship. He did.

"In the spring of my freshman year I started taking lessons at Island Home Airport in Knoxville," he says. "I got pretty hooked. I flew for three or four years pretty intentionally. Around that same time, I started my music career and I just ran out of money. I stopped flying altogether after around 180 to 200 hours."

He had played guitar since he was 12 years old and played in church. But the death of his younger brother pushed music to the forefront.

"Music helped me put a frame around that grief. I was listening to a lot of Van Morrison, Bob Dylan.... Music really carried me through that season, and that's when I started toying with writing songs," he says. "In my junior year, I studied abroad in Scotland, took my guitar, and ended up playing guitar for two or three hours every day because I really didn't know anybody in the place."

He also started writing songs. His career plan was to study history and write travel and history books.

"My friends were like, hey, these songs are kind of good, you should give it a try. So, I thought I'll just take a year off after I graduate and try this music thing. That was 22 years ago. I just never looked back."

He took a 15-year hiatus from flying, mainly for financial reasons.

"I was on the road 200 days a year. I put 360,000 miles on a Volvo station wagon in three and a half years, playing five nights a week at coffee shops, college campuses, bars, playing covers, playing my own songs. I've always been a bootstrapped, independent artist. There wasn't a lot of resources for flying for many years."

FIND YOUR PEOPLE

"In a world of strangers, you don't know who to trust
All you see is danger, trying to find what you lost
You can't go it alone, everybody needs help
You got to find your people then you'll find yourself."

If you are thinking *I've never heard of this guy,* you'll be surprised then to learn that Drew Holcomb and the Neighbors performed his song *Find Your People* in a Super Bowl commercial, *Live Forever* was the theme song for the TV show *House*, and *What Can I Do Without You* was in the show *How I Met Your Mother.*

If you look online, you'll see the music described as "Americana" or "Alternative Country." There's a lot of soul in the words and a lot of joy in the tunes.

"It's kind of folk rock. It's country adjacent, but it's more Tom Petty, less George Jones. It's storyteller, songwriter music," Holcomb says.

"My brother passed away suddenly, unexpectedly. I think it gave me a sort of old-soul perspective. It colored my creativity and my music. I have a lot of gratitude for my life and that spills out in my music. I think there's a lot of things that are really beautiful and wonderful, and my music tends to reflect that."

The band is called "The Neighbors" because that is how Holcomb has come to think of the musicians he plays with, two of whom have been with him from the band's beginning in 2005. And Ellie, the woman he met in college and became his wife, is a singer and songwriter with him, too. The couple recently released their own album, *Memory Bank*.

"The two who have been with me forever are Nathan Dugger from Memphis who plays the guitar—he can play anything and is the musical director—and Rich Brinsfield plays the bass. Then, we have Will Sayles from Dallas is the drummer, and Ian Miller is the keys player," he says.

Drew Holcomb and the Neighbors play venues such as Chicago's House of Blues, festivals like the Mississippi River Festival, and perform city-to-city tours each year. Holcomb often flies one of the two Cirrus aircraft (both a SR20 and SR22) he owns in a partnership with 11 other pilots to his concerts, but the band also has a tour bus and trailer. He now has more than 670 hours, 433 of those in the Cirrus aircraft in the partnership.

"We're not a household name and that's by design," he says. "The music I write and perform and that I love doesn't have a mainstream radio culture like if I was a 'country' singer or 'pop' singer. We're in the hustle category where we make a good living. We get to do a lot of really wonderful things."

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"YOU CAN'T GO IT ALONE,
EVERYBODY NEEDS HELP
YOU GOT TO FIND YOUR PEOPLE
THEN YOU'LL FIND YOURSELF."

CIRRUS
AIRCRAFT

FAMILY

"Family, all in this together
Family, we're taking a chance
Family, like birds of a feather
Family, kick off your shoes and dance."

Now you'll know his name: This thumping song is featured on a Ford F-150 commercial that first aired during Super Bowl 2022. As soon as you hear it, you'll get it. *Family* is one of the many songs that really gets Holcomb's fans up and on their feet.

"A lot of people will know our songs but not know who it is," he says. "Then we start playing and like, oh, yeah."

As his fortunes changed, so did his desire to fly again.

"I still had some friends I would go up with now and then, and I'd been telling my wife that I really wanted to get back into flying. I think she always thought I was just talking," he says. "But then COVID hit, all of our shows were canceled, and I had a lot of time on my hands. I was doing a podcast with a guy who told me he was in a partnership with a group of guys that own two Cirrus aircraft. The airplane we flew here today is part of that partnership. The last four or five years, I've been flying 100-plus hours a year. I think that long break made me realize how special it is to get to fly. I also have a lot more to lose now than when I was flying as a 20-year-old. There's a lot of reasons to take it very seriously."

He flies one of the two Cirrus airplanes more than most in the partnership, flying his family of five on trips, for the pure pleasure of it, and to his concerts.

"I can play a show and be home by noon. Flying for me allows me to hang out with my kids in the morning, play the show, fly back," he says. "All my kids like to fly with me, and my wife flies with me as well. She likes the Cirrus. She has a lot of peace of mind with the Cirrus."

He has written several songs about flying because, he says, flying is like magic.

"One of my favorite ways to fly is slow and low over rivers. I love to just fly like 70 knots, find a river, and follow it. The first line of my song *Troubles* is I want to float like a bird, slow and low...."

As we follow the Mississippi River on our way to his concert, he starts to sing from *Troubles*, which he wrote after the Uvalde shootings, his voice raw and accompanied only by the hum of the airplane's engine: "I want to float like a bird, slow and low, I want to follow the river wherever it goes, I want the wheels of time to jump the track, I want to leave all my troubles and not look back."

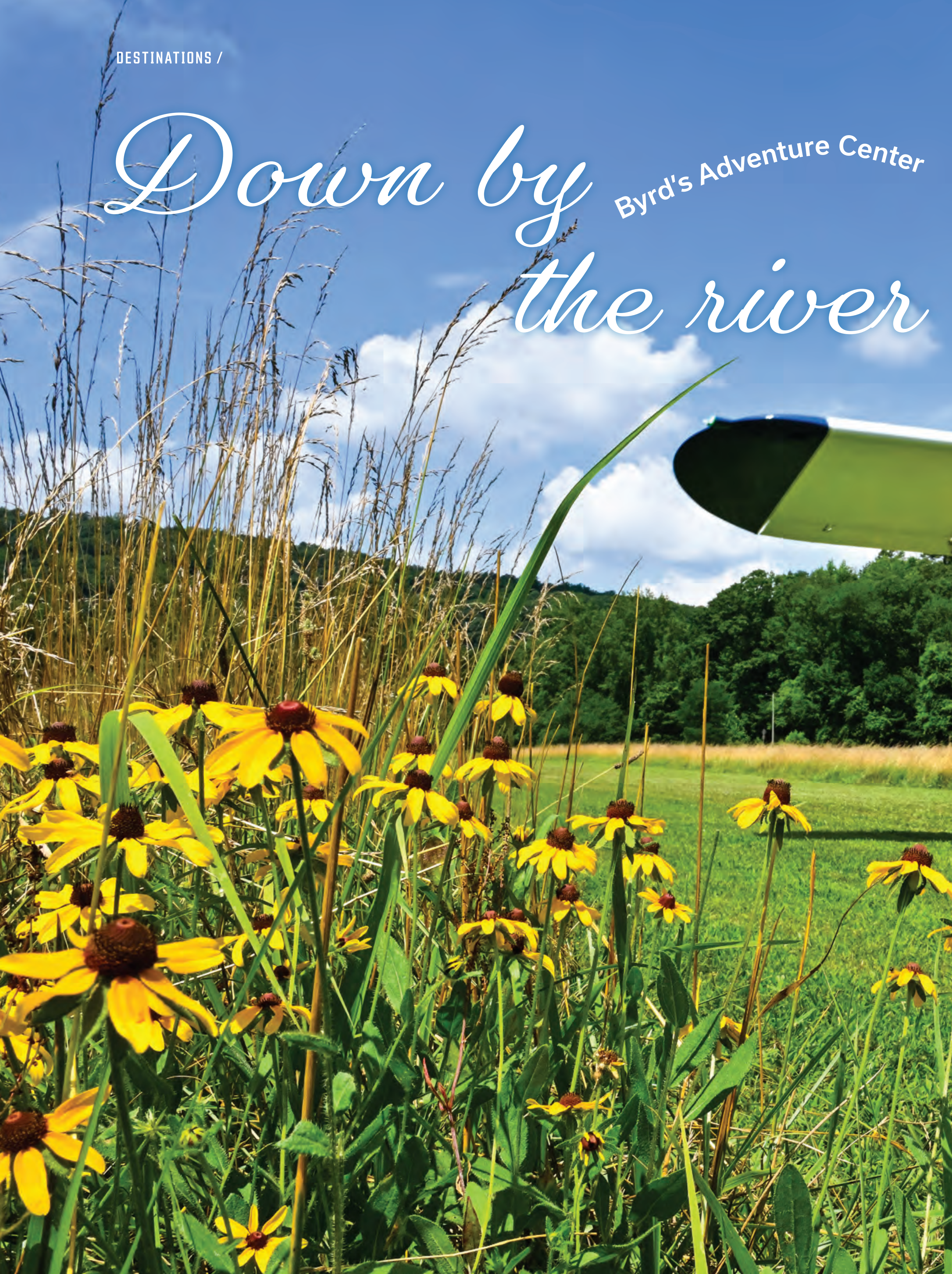
It is a moment. ▪ *julie.walker@aopa.org*

▶ **drewholcomb.com**

SR22
N422RJ

Down by the river

Byrd's Adventure Center



offers a pilot haven on the Mulberry River

BY ALICIA HERRON | PHOTOGRAPHY BY DAVID TULIS

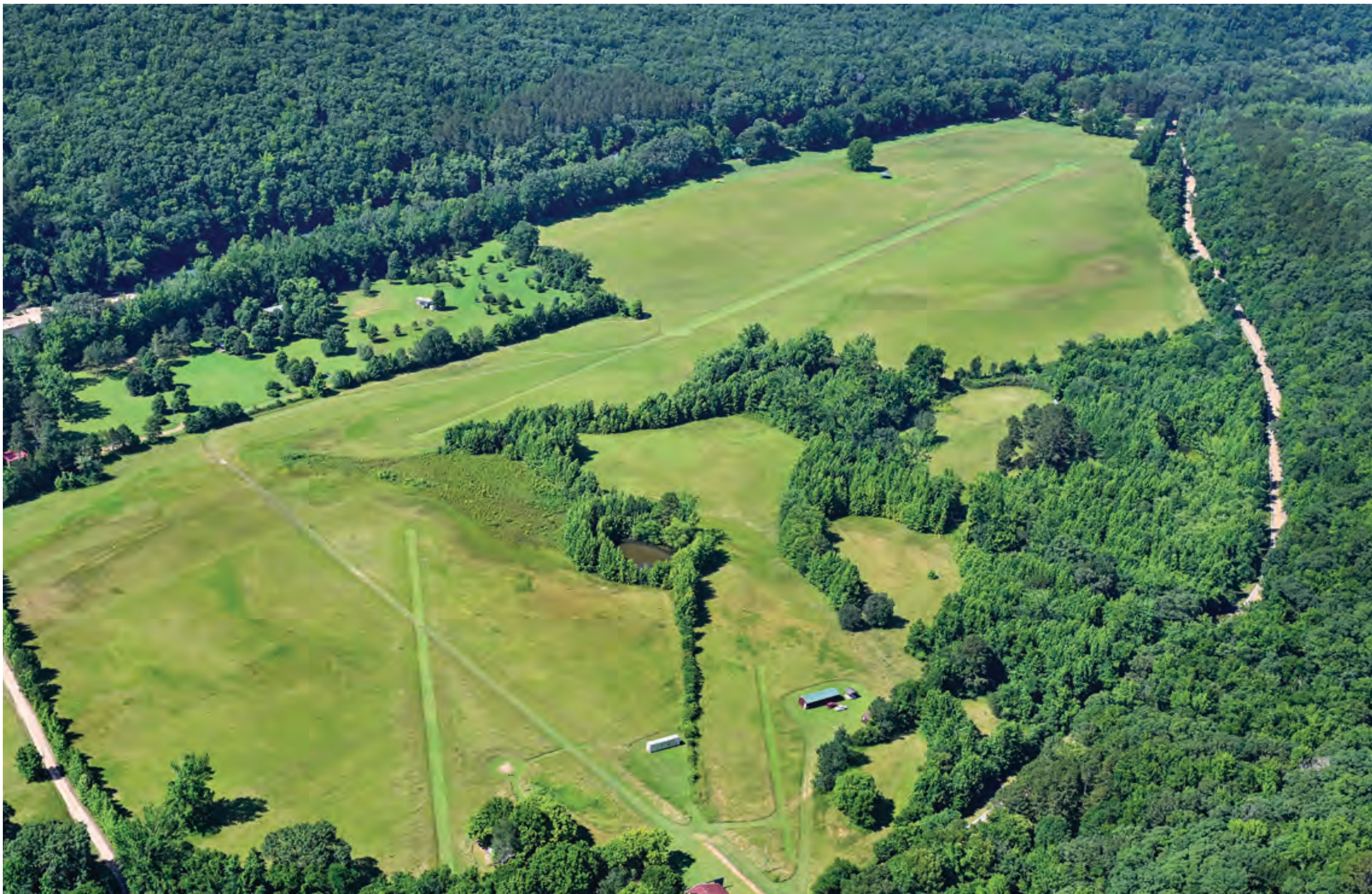
If you haven't heard of Arkansas's backcountry, you haven't been paying attention. A well-kept secret to locals for years, Arkansas, and particularly northwest Arkansas, has become a hotspot for off-airport adventure in the past few years, ranking up there to some pilots with Idaho and Montana in terms of backcountry splendor. From challenging strips on hilltops to beginner-friendly, towered grass airports, Arkansas has something for every skill level. One of the must-visit gems of this area is Byrd's Adventure Center.

We're flying with backcountry wizards from Thaden Field (VBT) in Bentonville to Byrd's, located in Ozark National Forest. Steve Johnson, king of Piper Super Cubs, is flying in his Cessna 185 Skywagon (his Cub is stuck in Montana because of weather); Chip Gibbons, one of the founders of FlyOz, is in his pristine white and blue Super Cub; and instructor and A&P Phillip Sneed and I are in one of FlyOz's yellow training Super Cubs. For Sneed, this is another normal day. He visits Byrd's at least a couple times a month; it's a great milestone training field for tailwheel and backcountry students and is also a place pilots of all aircraft types consistently want to get checked out to fly to.

It takes only moments to escape urban Bentonville and feel like we're in the wilderness. We're all flying the best way on Earth, low and slow. The horizon soon becomes green rolling hills, and glimpses of rivers all covered in a dreamy summertime haze made by stifling heat dome conditions. Flying with the door open on any summer morning is a treat, and today it is a necessity.

After weaving through valleys, Sneed tells me Byrd's is dead ahead. His expert eyes pick it out quickly, but at first, I'm colorblind to the green on green I'm trying to find. Once I see it, though, it becomes obvious. Byrd's main strip is 2,500 feet long although the nicest part is 1,900 feet, wide enough for the gear, narrower than the wings, and well-manicured and welcoming. Even though it's longer than many other fields in the area, you still have to earn the landing here, as it's tucked into the valley with an imposing preferred one-way-in

The restaurant sits just above the Mulberry River. Byrd's main strip is the longest—the others that look cleared are Zen's experiments, some of which are used in their timed landing competitions. Zen and Pam Boulden's background in outdoor education influences their daily life at Byrd's.



BYRD'S
PEACE
LOVE
BYRD'S

"I feel like Alice is dropping down the rabbit hole. Like what does Wonderland have in store today?" says Pam. "We're rarely bored."

one-way-out approach. Even on this hot day, it's no problem for the Super Cub, which always feels more at home on grass. A little power back, a little dance on the rudders, and eyes down the strip (with a little bit of a higher heart rate seeing those trees at the end of the runway), and the Super Cub is down and stopped with ease. Tall yellow and purple wildflowers line the mowed strip, the bright green of the runway's freshly mowed grass directing us to the shaded tree line to park next to a pair of other visiting aircraft.

The breeze carries the woodsy aroma of freshly cut grass mingled with 15 percent Deet bug spray. It's summer, one of the quieter times at Byrd's because of the oppressive weather. Spring and fall are their high seasons—a roller-coaster-like undulating pattern of high and low seasons throughout the year based on weather. The heat and humidity aren't so bad if you accept your fate and avoid the ticks in the tall grass.

Pam and Zen Boulden, as well as Nala, greet us after we land. Nala is the couple's 110-pound Maremma, an Italian livestock guardian dog. They met her as a puppy on a trip to Alaska and brought her home with them. She is impossible not to love.

Pam is the Byrd of Byrd's, but, she says, Zen knows the family history at least as well as she does, and maybe better. She grew up on the property and helped start the canoe business in 1982, which they did partly to give land access to the public after rumors of turning the area into a national park. Believe it or not, the movie Deliverance was great for the canoe business. Zen and Pam's background is in outdoor teaching, and they worked at Outward Bound, National Outdoor Leadership School, and as rafting and climbing guides for years before coming back to help run Byrd's.

Since those early canoe days, they've expanded to include fishing, hiking, kayaking, off-roading, and of course, flying. They also host music festivals, fly-ins, timed landing competitions, and extreme survival training.

"It's like every time I turn down the driveway, I feel like Alice is dropping down the rabbit hole. Like what does Wonderland have in store today?" says Pam. "We're rarely bored."

Aviation joined the list of adventures in the early 1990s, an addition motivated by Zen's love of flying.

"I knew that I loved aviation as a very little child, but we didn't have any aviators in the family," said Zen. Zen started out with hang gliding, first with an old Rogallo that he bought for $150 with lawn-mowing money as a teen, then a Wills Wing Sport that he took with him and Pam all over the country after they met in college in 1991.

"And in the summer of 1994, while we were still dating, I flew my hang glider off of Mount Magazine about 35 miles south of here and landed in the hay field out here. Yes. And I thought that I would really impress my girlfriend and her parents. Landed in August in the tall hay and hiked about a mile to get here. And no one cared. They were all like, 'Hey, where you been? We need you to go load some canoes. We need you to drive some shuttles.'

While the terrain isn't as tall as the Mountain West, it still counts as backcountry, and flying into Byrd's will require some finesse.

"But I did ask her dad, I said, 'Kenneth, would you mind? Could we ever mow a runway out there to tow hang gliders behind ultralights?'

"And the next thing I knew, he was on his lawnmower and said, 'Where do you want that runway?' And that's how it all started."

The runway we landed on is essentially in the same spot that Pam's dad mowed, and the other listed runway ("the restaurant strip") is 1,000 feet and strictly no go-around, and also conveniently located right in front of the cabin we'll be staying in later. While those two are the official strips, Zen notes he's always looking for spots.

"We've had as many as 21 runways mowed at once, but there's actually room for a lot more. Most of those are really, really short for practice purposes. Some of them are 150 feet long. But then we try to position them incrementally so that experienced pilots can gradually work their way into shorter and shorter runways safely with lots of margin. So that if you scratch, there's no penalty. And if you accidentally roll too long, there's no penalty other than just getting grass in your prop."

The runway was initially used just for hang gliding and towing and grew with Zen's own flying. In 2004 he became a sport pilot, then earned his instructor rating in weight shift in 2007.

"And the next thing I knew, he was on his lawnmower and said, 'Where do you want that runway?' And that's how it all started."

Stay awhile

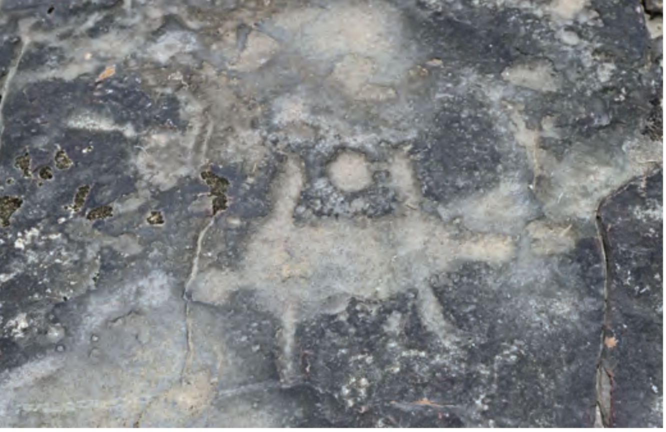
"We have six cabins. You can come in and stay in a cabin," says Pam. "We have 100 electric campsites and then we have pretty much unlimited primitive camping." Call ahead to give them a heads up and book via phone.

▶ **byrdsadventurecenter.com**

"And in April, about 2005, I was able to save up and purchase my first powered hang glider, a weight shift trike from Australia and flew that for about 10 years. And then I finally found the little yellow airplane that I had wanted since I was a little kid. And it wasn't a J–3 Cub. It was a Kitfox, but just as much fun." He keeps that little yellow Kitfox in an old barn on the field and tries to fly it a few hours a week at least.

We hop a ride in one of the canoe vans with Zen for lunch. The restaurant overlooks the Mulberry River, made a glacial blue from the area's limestone deposits, which bends through Byrd's land. We have a buffet of their best foods to choose from, and I will say everything that I tried (half a burger, half a Reuben, fries, and pie) is worth

Nala observes her domain, resting after a long day of being everyone's favorite dog. The food is well worth the trip—make sure to visit on a weekend if you want to dine on-site.



Ancient petroglyphs line one stretch of the river, their true meaning lost to time. Zen, camp mug almost always in hand, delights in being our tour guide before a quick dip in the swimming hole behind him. Zen's beloved Kitfox naps in an old barn. A visitor traces the river before landing on the restaurant strip—a challenging, no go-around strip right by the cabins and (you guessed it) restaurant.

flying for. Regulars Johnson, Gibbons, and Sneed also give rave reviews to everything, including the pork chop special and salmon, which Pam says is one of their most popular dishes even in landlocked Arkansas.

We stop by the store, where there are fishing essentials and Byrd's gear, basic provisions, ice cream behind the counter, and a whole handmade shelf devoted to smores, nostalgia for childhood campfires strong enough to bring the charred marshmallow smell to the front of mind.

Pam and Zen are the kind of couple who truly seem like they're each other's best friends. They've both retained a childlike wonder for the land they feel more like caretakers than owners of. A sincere wish to share it with people, and it's done with such hope that you'll find it special, too; it feels like being trusted with something precious and fragile.

While they no longer host ArkanSTOL, the popular landing competition that ran for four years, they still have a couple of invitational fly-ins and timed landing competitions. Zen notes that support from some of the STOL greats like Steve Henry and Hal Stockman, both of whom have competed in timed landing courses at Byrd's, has meant so much to him.

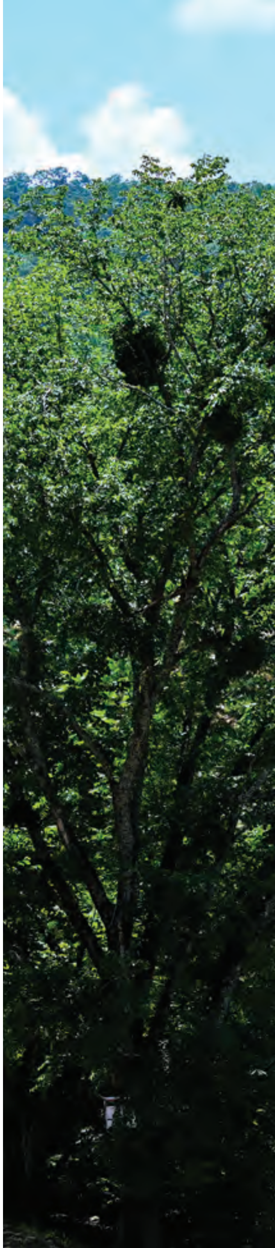
In the afternoon of our second day, Zen takes us to the petroglyphs, which the archaeology department at the University of Arkansas dated to 4,000 years ago. The petroglyphs appear to be mostly animals and perhaps a beheaded humanoid (not spooky at all in the deep woods of Arkansas). People, some kinds of people, have been coming here for thousands of years. Conveniently adjacent to the petroglyphs is Whoop and Holler rapids and a swimming hole. It's too enticing to resist, and we hop in clothes and all, the cool, cool river a welcome relief, the current cleanses our salty, sweaty skin.

Bird calls and the whisper of water are the only sounds besides our conversation. Zebra butterflies dance among the pink blooms of a nearby mimosa. The ancient weight of nature's ineffable continuity is all around us, in this land that has been here long before us, and will be here, a gathering place, long after we die. It's a comforting reminder that the world is bigger than us, and that even once unfamiliar places can feel like home, even if briefly.

All day the clouds have been threatening to build on us, but instead of a downpour, we get a stunning vibrant sunset, the kind you only get in thunderstorm country; the kind you want to clap for because it is so lovely. Pam and Zen's friend Kenneth Monger from Game Aerospace shows up in his 1957 Cessna 172 after a day of work at VBT to show us just what a straight tail 172 can do. From the porch of the cabin, a pilot couldn't ask for a better view. The 1,000-foot restaurant strip is right in front of us, and the sun sets behind the hills beyond the strip. Zen's day is done, and he takes off again to fly for fun before his sport pilot privileges vanish with the daylight, and Pam and Nala watch from the ground with us. The fireflies come out to play, and the last light fades to beckon the Milky Way, thick above us in this secluded wild land.

Pam and Zen hope to introduce more outdoor education, training, and wellness. No matter what the future brings at Byrd's, Zen and Pam intend to have aviation be a part of it.

"Byrd's has always been very excited about all types of aviation. And because of that, everyone has been welcome. And the entire aviation community all through the region has built this place," says Zen. "I think we're all excited to share it and pass it along as well and try to get young people excited as well. And that's just been amazing." ■ *alicia.herron@aopa.org*

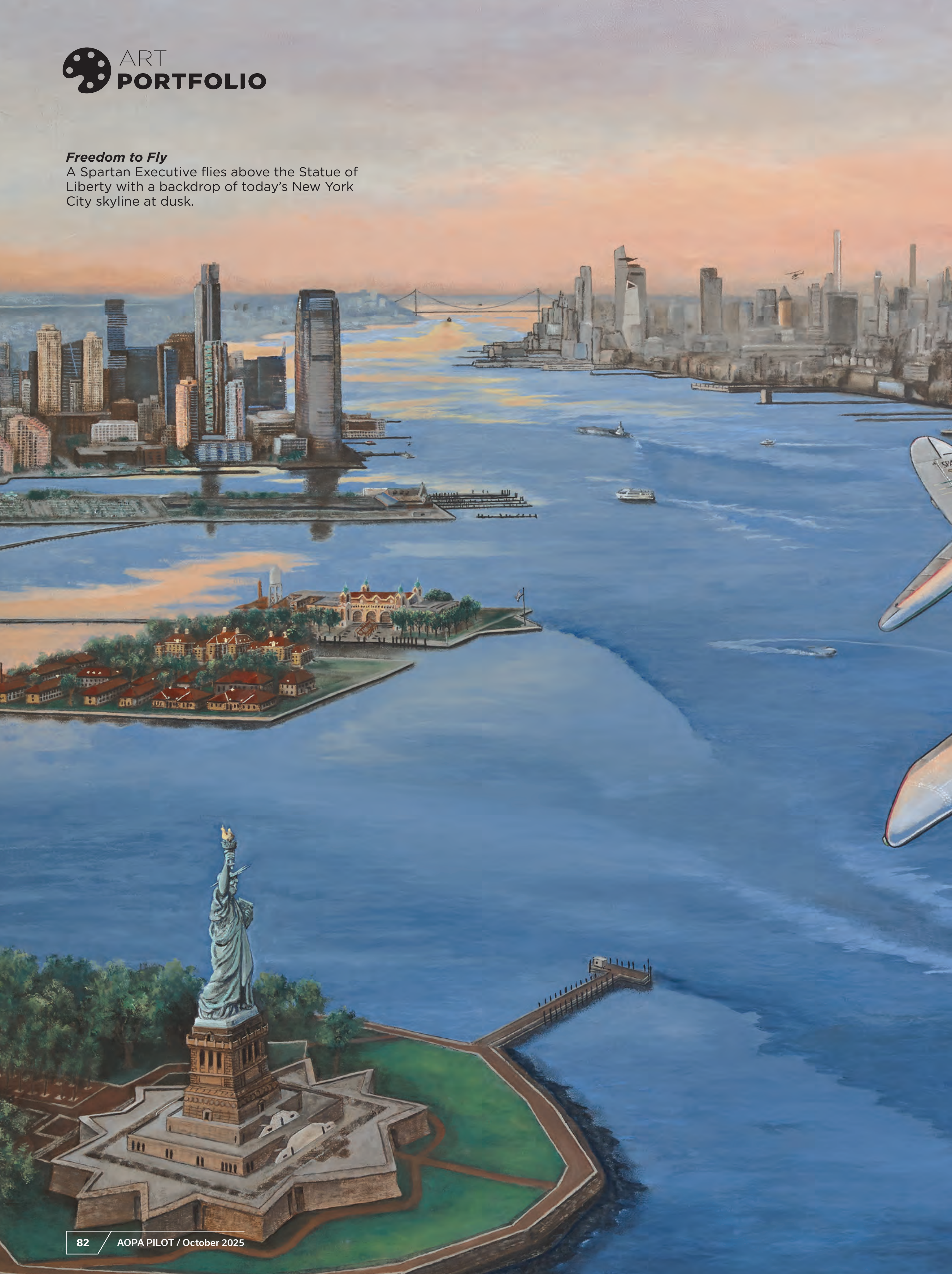


Fly in

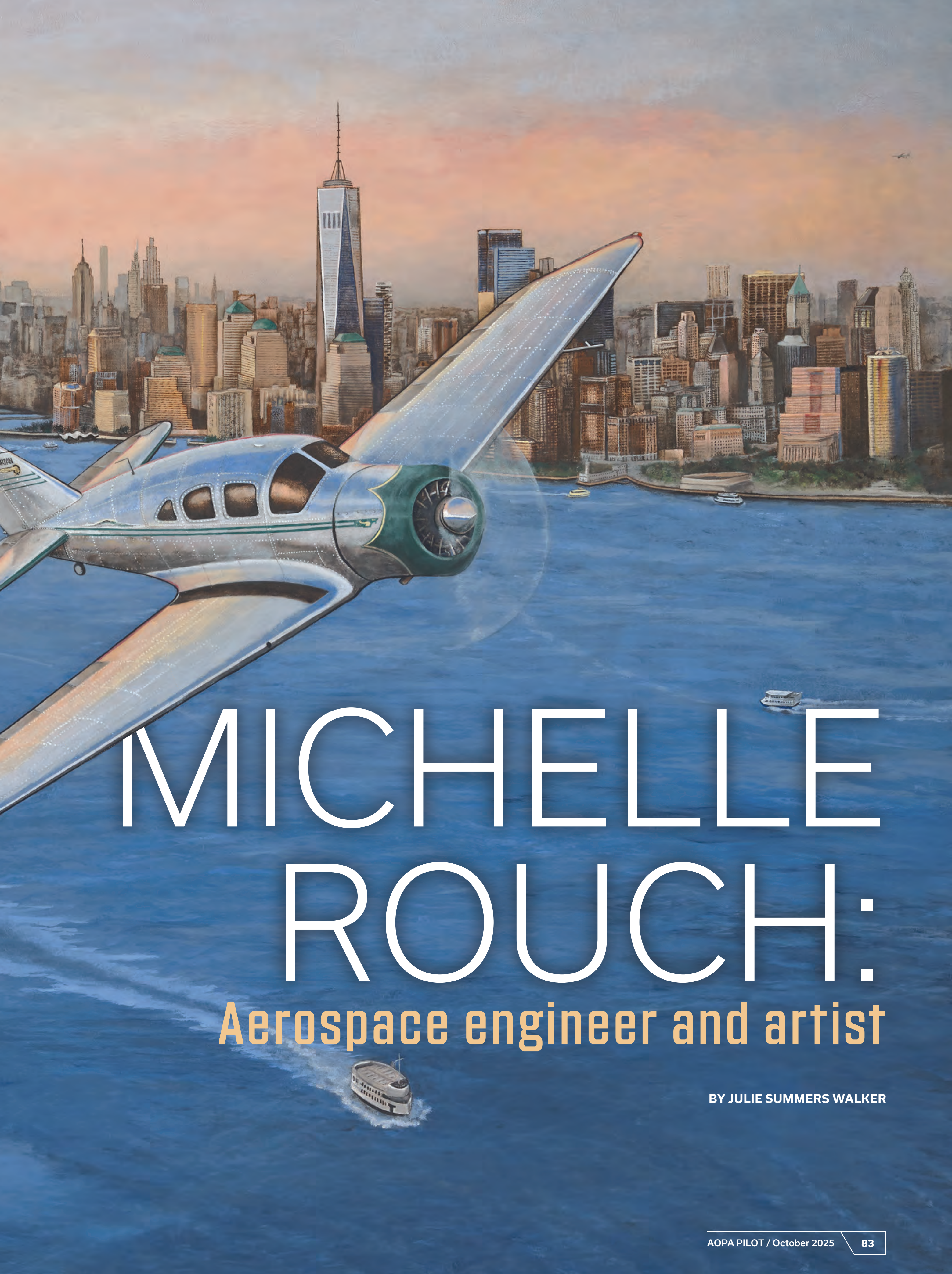
While Byrd's isn't the trickiest backcountry spot out there, it does require some training—and Pam notes that they never want Byrd's to be someone's first solo backcountry experience. Check out the folks at FlyOz to book a flight to Byrd's with an instructor.
▶ **FlyOz.com**

The ancient weight of nature's ineffable continuity is all around us, in this land that has been here long before us.

ART
PORTFOLIO



Freedom to Fly
A Spartan Executive flies above the Statue of Liberty with a backdrop of today's New York City skyline at dusk.



MICHELLE ROUCH:

Aerospace engineer and artist

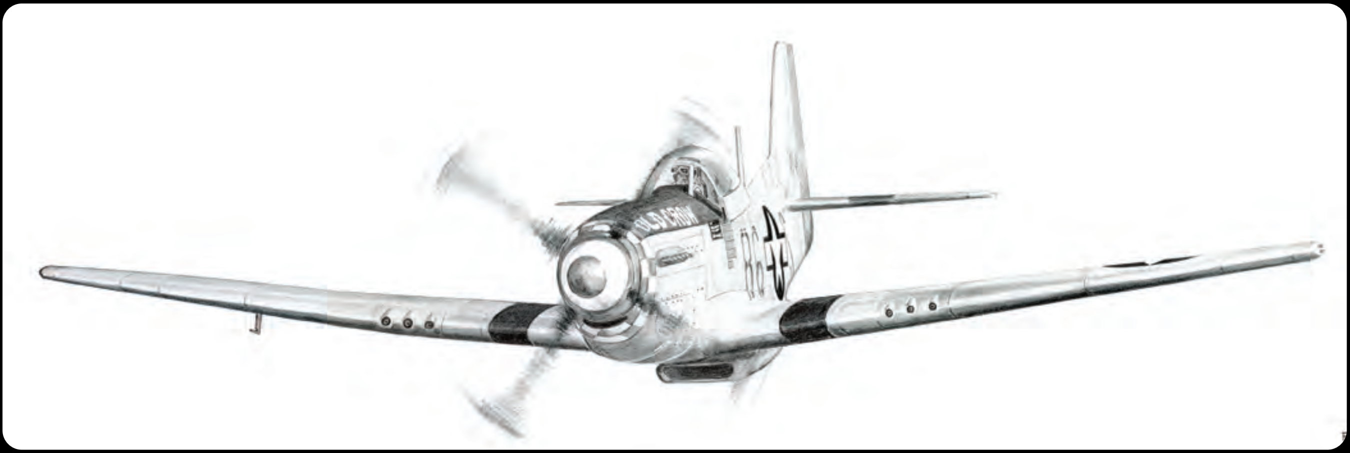
BY JULIE SUMMERS WALKER

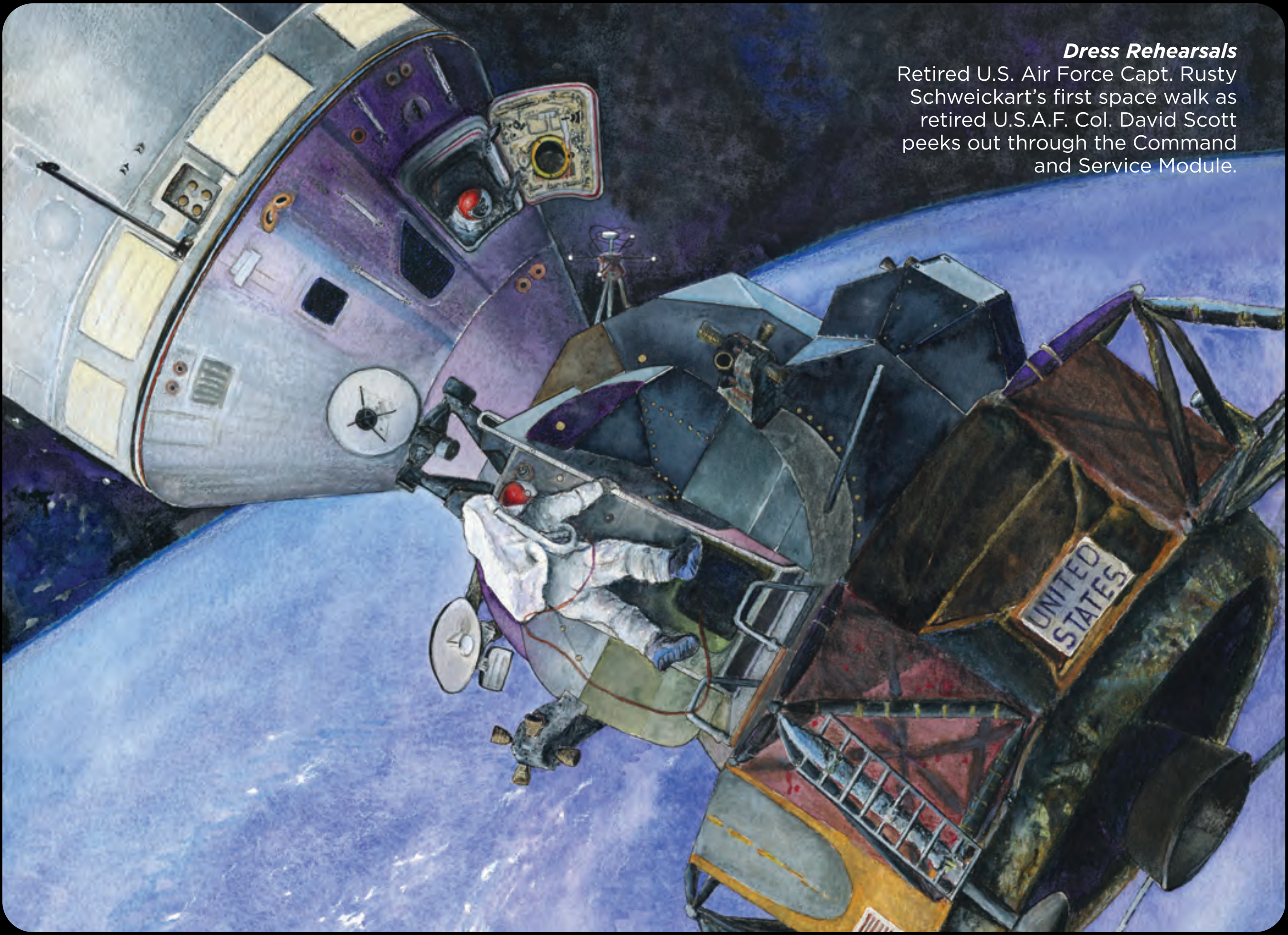
> “I have been very active in the American Institute of Aeronautics and Astronautics in teaching kids how an airplane can fly, teaching them the four forces of flight, and what aerospace engineers need to consider in designing an airplane. We try to make this a pleasant experience for the kids who go through our AIAA kids club program.”

ARTIST MICHELLE ROUCH grew up in the small town of Kettering, Ohio, which is a familiar town to pilots. A suburb of Dayton, Ohio, and home to the U.S. Air Force Museum, the area is rich in aviation history. Rouch and her older brother grew up learning to appreciate aviation and while the little sister was not as encouraged to pursue the same educational opportunities as her brother at the time, she did end up following his path and eventually became an aerospace engineer. “Thankfully our parents raised us pretty equally and my brother was a good influence on me and encouraged me to be an engineer like him.” She got her bachelor’s degree in electrical engineering from Wright State University and had her first job at Wright-Patterson Air Force Base. “I would say, though, that my real start of my passion for aviation came from my husband, who was an Air Force brat; his father was a pilot in the Greek Air Force.” Rouch has been an artist since she was a little girl, and her mother has kept all her drawings. After a highly successful career in engineering with the U.S. Department of Defense—receiving the Civilian Service Medal—she retired to pursue her art. “One day I was having an artist’s block, and my husband encouraged me to paint an airplane. I enjoy painting portraits and buildings and mathematically and visually adding or merging those subjects together,” she says. “I created the painting of an Albatross at Pima Air and Space Museum with our 5-year-old son walking towards it in a watercolor. That was my first aviation painting, created in 2002, titled *Aspiring Pilot*. I fell in love with aviation and never looked back.” In addition to painting for museums and individuals, she has illustrated several children’s books, one about Apollo 15 astronaut Alfred Worden and another about Robert “Hoot” Gibson. She’s working on illustrations for a book about the Vietnam-era rescue of Bat 21, which will be published at the end of this year. ▪ *julie.walker@aopa.org*

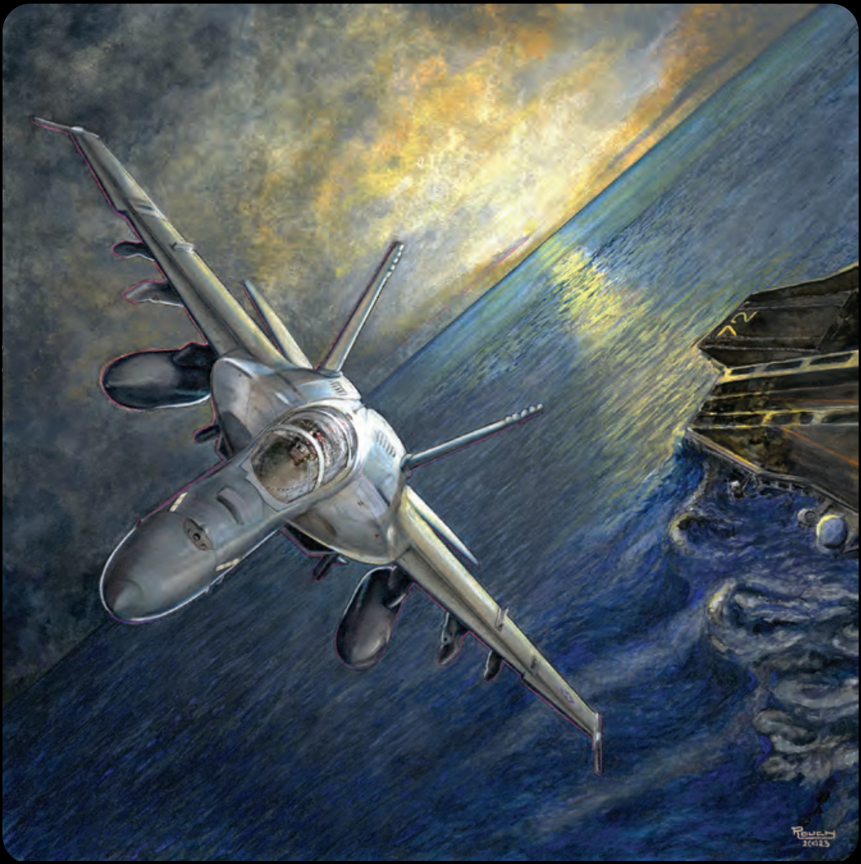
▶ **rouch.com**

Here Comes Old Crow
This pencil drawing depicts “Bud” Anderson’s North American P–51D Mustang *Old Crow.*





Dress Rehearsals
Retired U.S. Air Force Capt. Rusty Schweickart's first space walk as retired U.S.A.F. Col. David Scott peeks out through the Command and Service Module.

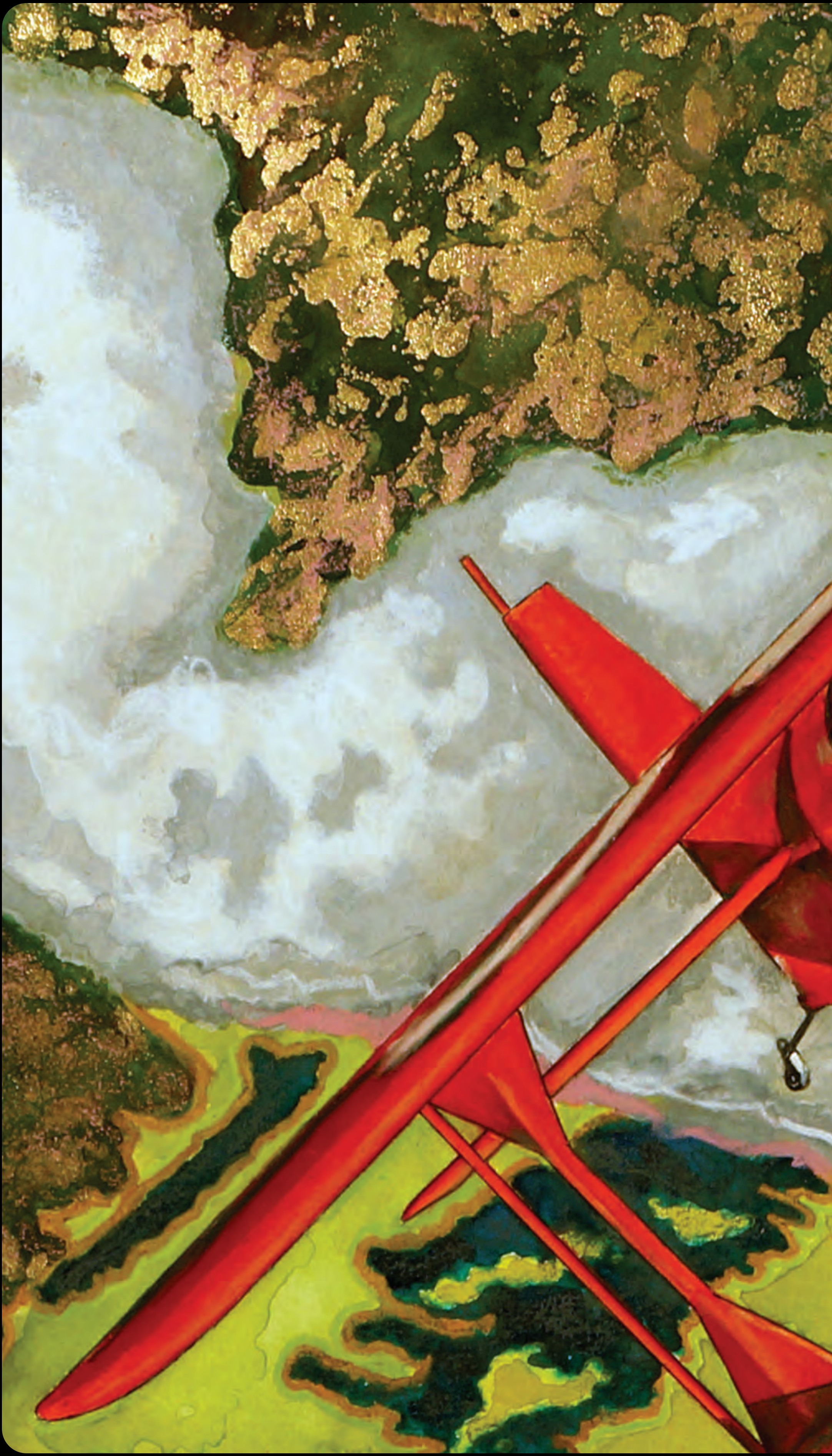


> “The artwork debuted at the fiftieth anniversary of the Apollo 9 mission during the San Diego Air & Space Museum gala in 2019.”

> “Meeting Tom Cruise at the Living Legends of Aviation and seeing the latest *Top Gun* movie, I couldn't help myself but to depict a Top Gun pilot.”

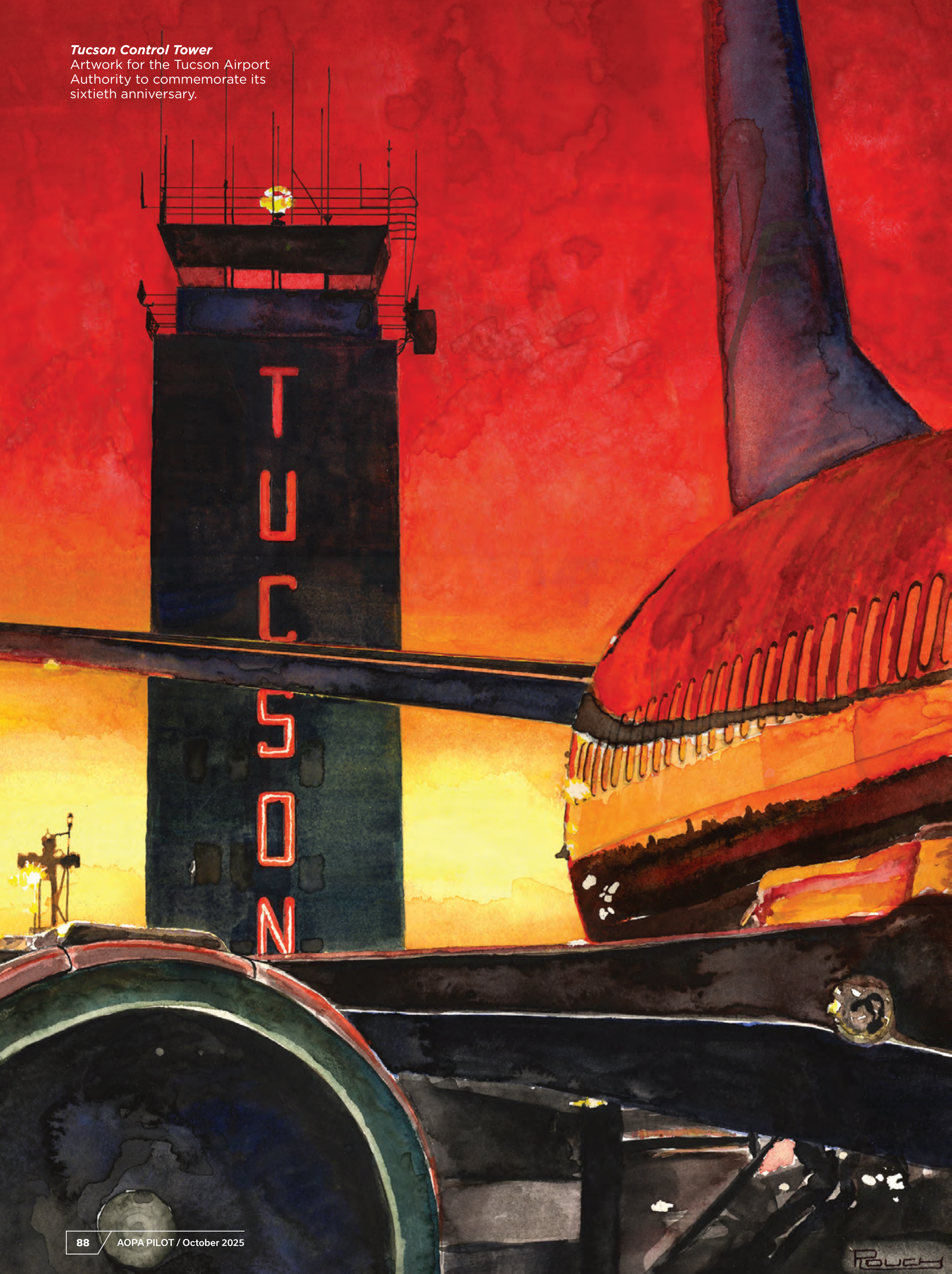
Highway to the Danger Zone
“Maverick” performing a high-speed flyby of the USS *Abraham Lincoln* in his Boeing F/A–18E Super Hornet.

> “The energy of Sean D. Tucker flying his Team Oracle Challenger III biplane and making those crazy corkscrew maneuvers inspired me to paint. The backdrop is EAA AirVenture in Oshkosh. I used oil-based gold paint and watercolor, which most painters won’t mix, but I do.”



Airshow
Sean D. Tucker flying his Team Oracle Challenger III biplane.

ORACLE

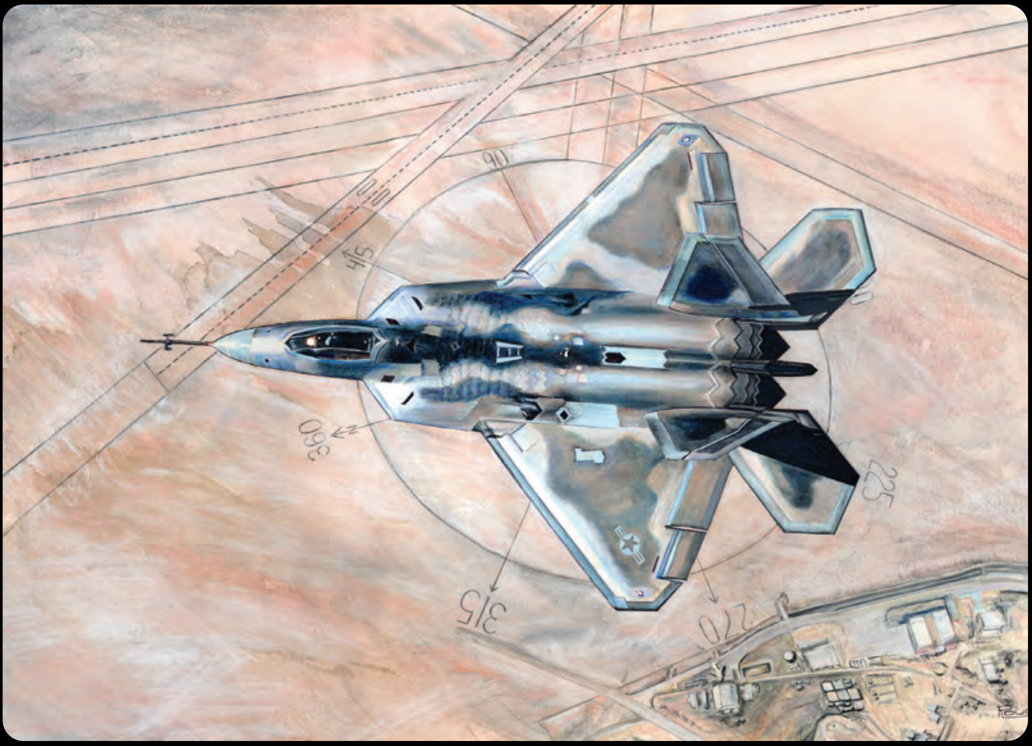


Tucson Control Tower
Artwork for the Tucson Airport Authority to commemorate its sixtieth anniversary.

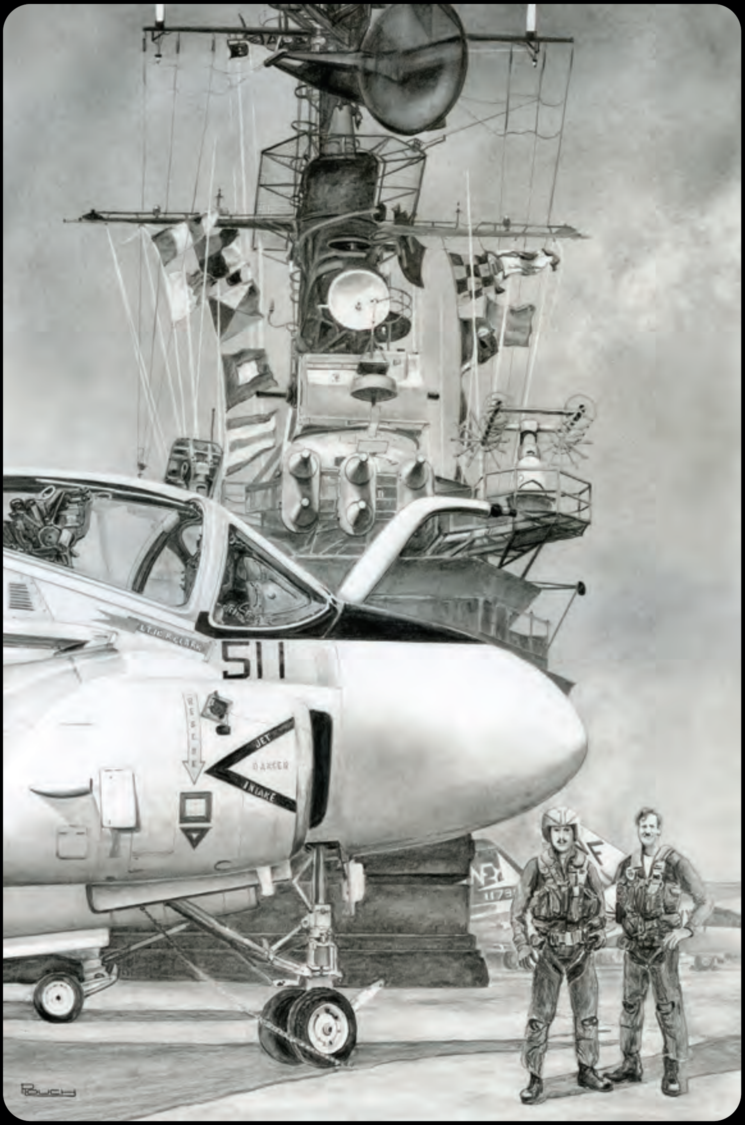
“This piece was created during a time I was in Clearwater, Florida, as a government liaison overseeing the Tactical Tomahawk Cruise Missle Critical Design Review. I found time in the evenings to create the artwork. The water in Clearwater was hard [contains a high concentration of dissolved minerals], but made the painting look fantastic.”
(left)

“My favorite part is capturing a moment in time, gaining the inspiration to make a painting of someone’s aviation experience.”
(top right)

“My husband’s best friend mentioned that not many folks pay attention to the Vietnam War and that I should find something significant to tell a story through art.”
(bottom right)

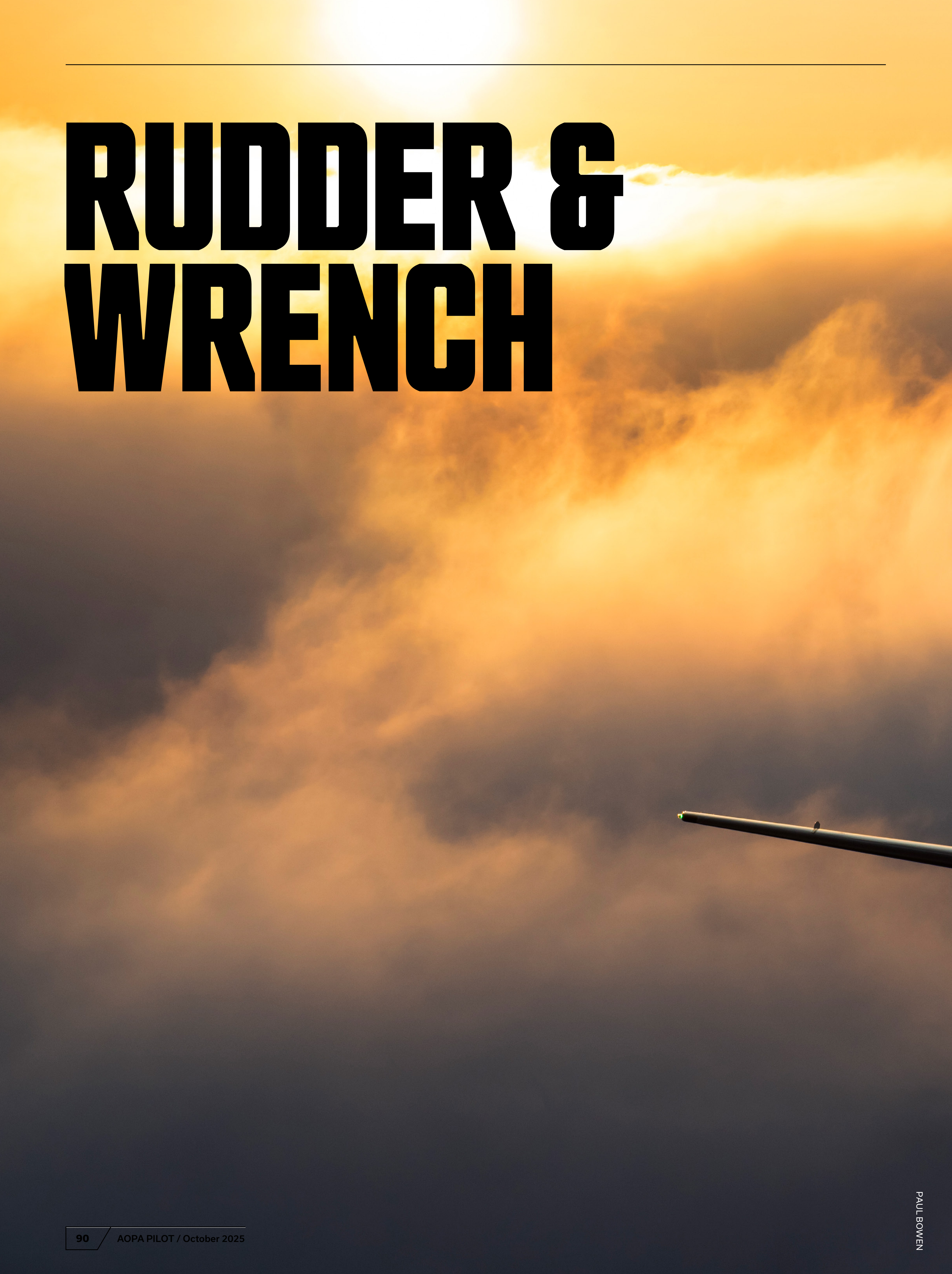


F-22 Raptor Over Compass Rose
A visit to Edwards Air Force Base.



Together We Serve
U.S. Navy Lt. Mike “Mondo” McCormick and Lt. j.g. R. Alan “Arlo” Clark were the last flight crew to give their lives during the Vietnam War on January 10, 1973, here on the USS *Midway* with the A-6A Intruder “Arab 511.” The artwork commemorated the fortieth anniversary of the end of the war and debuted at the Watergate Gallery in Washington, D.C.

RUDDER & WRENCH



PAUL BOWEN

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Options at TBO

BY RANDY S. BOLINGER

AS PILOTS, EVERY hour flown adds value to our aviation credentials and knowledge base—our aviation curriculum vitae. For aircraft owners, every hour flown reduces the value of the aircraft with a significant financial decision looming when the engine reaches time between overhauls (TBO). There is also a TBO spec measured by trips around the sun regardless of how many hours the engine has been spinning.

TBO is the original equipment manufacturer's recommendation for overhaul based on tens of thousands of testing hours and data analysis compiled from engines in service. The objective of the TBO milestone is to provide guidance for preventive maintenance with plenty of safety margin built in. What is commonly misunderstood is whether the OEM's recommended TBO triggers FAA-mandated maintenance. It may be misunderstood because the answer is: It depends on the application.

The good news is that for most general aviation operations, TBO is merely an OEM recommendation, not a required maintenance interval. Required maintenance at TBO falls under FAR Part 135 operations (air taxi).

Regardless of when the engine's productive life draws to a close, there are a variety of options to consider, each with a unique value proposition.

Option 1: Fly beyond TBO (deferred decision)

Except for the Part 135 scenarios, neither the engine OEM nor the FAA requires service upon reaching TBO. Based on engine condition, the powerplant can be operated beyond the recommended TBO insofar as the engine continues to be maintained in accordance with mandatory service bulletins, airworthiness directives, and FAA requirements like 100-hour and annual inspections.

Savvy aircraft operators use oil analysis to track and monitor engine condition. Compression checks are also a good indication of top-end engine condition. Owners deciding to operate beyond TBO may consider doing both more frequently for early detection of accelerating engine component wear.

While continuing to operate beyond TBO is perfectly acceptable for most, it only defers the inevitable engine maintenance decision. From an aircraft value perspective, once the engine exceeds its published TBO, additional operational hours likely will not continue to diminish aircraft value because the engine will already be deemed to be "run-out" regardless of actual engine condition. Keep this in mind for Option 6 at the end.

Option 2: Engine overhaul (cumulative engine time/zero SMOH)

The overhaul option has the most variability. Price, quality, downtime, warranty, and perhaps peace of mind vary greatly when opting for an engine overhaul. The spectrum of alternatives ranges from factory overhaul to highly specialized maintenance, repair, and overhaul (MRO) facilities, independent maintenance shops, and individual A&Ps.

Reputable engine overhaulers have excellent processes, procedures, trained staff, and quality control. Some overhaulers use only OEM parts and specs. Others may use aftermarket parts and may claim to improve the engine in the overhaul process. An A&P occasionally overhauling engines as needed may or may not have the same level of subject matter expertise, familiarity, or quality control as a facility that does overhauls all day, every day. Equally important considerations are aircraft downtime (versus the installation of a complete engine) and engine warranty (coverage, length, and service network).

Keep in mind that an engine overhaul does not reset the engine time to zero—only the manufacturer can do that. The overhaul, regardless of how extensive, is maintenance performed as a continuation of the engine's life since new. For example, if an engine had 2,875 hours before the overhaul, it still has 2,875 hours after the overhaul. However, an overhauled engine will commonly be considered as X hours since major overhaul to indicate the freshness of an engine post-overhaul.

Option 3: Factory remanufactured engine (zero SFRM)

Factory remanufactured engines are built by the OEM, use OEM parts, include a factory warranty, and start at zero time. In most cases, all new parts are installed with the possible exception of crankcases and crankshafts.

There are some key benefits to selecting a remanufactured engine. Remanufactured engines are built in the factory by OEM-trained workers and are assembled to current standards reflecting any enhancements or modifications that may have occurred since the engine was originally built. The warranty will typically be longer than an overhauled engine and should be readily honored at any OEM-authorized service center nationwide. And best of all, downtime is significantly reduced.

In most cases, you can purchase a remanufactured engine and continue flying until the replacement engine arrives. Upon returning your run-out engine to the OEM, a core value will be reimbursed if the engine being returned is complete, assembled, and serviceable as a future factory-remanufactured engine.

Option 4: Factory-new engine (zero SN)

If money is no object, the decision to install a factory-new engine is an easy one. The factory-new engine includes 100-percent genuine OEM parts, offers the longest warranty, and includes any enhancements or modifications that may have occurred to the engine variant over time.

Don't get discouraged by the process, but rather enjoy the experience of owning and operating an aircraft.

Those opting to install an engine rather than overhaul can also explore whether any STCs apply to the aircraft make and model that may include upgrading the powerplant to one with more horsepower or perhaps even a different engine altogether like a Jet A-burning diesel. STC upgrade or not, choosing a new engine will also have the highest price tag.

Option 5: Salvaged engine (TBD)

Purchasing an engine from an aircraft salvage company requires considerable due diligence. While the purchase price will undoubtedly be very attractive, the value proposition may be uncertain.

Typically, the buyer assumes the risk on a salvaged engine if purchased "as is." There may be unknown or undisclosed issues, and it may or may not have logbooks. Some known problems may be noted by the seller, but without an engine tear-down for inspection, there is no definitive way of knowing the condition of the engine.

For example, an engine listed as "10 SMOH" that was removed from an airframe destroyed in a hurricane may sound like a great find. But the engine should be torn down and inspected for rust (caused by water ingestion or stagnation), bent crankshaft (if the hangar collapsed and struck the propeller or if the aircraft was blown over), or any number of scenarios that could render a salvaged engine to be unfit.

Consequently, the total cost of purchasing a salvaged engine should include the cost of teardown, inspection, and repair if necessary. When budgeting for a salvaged engine, consider a worst-case scenario, like discovering a bent crankshaft upon inspection. If cost of purchasing a salvaged engine, tearing it down, and possibly replacing major components like the crankshaft or all cylinders and a cam is still cheaper than purchasing a remanufactured engine, then it may be good value. If an engine fails prematurely, it may cost you dearly.

Option 6: Sell the aircraft

The final option is to avoid the engine refresh decision and sell the aircraft as-is with a run-out engine. Doing so allows the new owner to consider the options. Any number of scenarios may be the catalyst for an aircraft owner to step up or step down, selling an aircraft when the engine is run-out is as good as any.

Whenever the time comes for an engine overhaul or replacement, explore the options and value propositions and seek advice from subject matter experts. Don't get discouraged by the process, but rather enjoy the experience of owning and operating an aircraft—it's a privilege that a small percentage of the population will ever know. ■ *Randy S. Bolinger is a marketing, communications, and brand management leader in the aviation, auto, and powersports industries. He is an instrument-rated pilot, has been flying for more than 30 years, and owns a Cessna 177 Cardinal.*

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SAVVY MAINTENANCE / OPINION

Changing the oil

Our most frequent and routine maintenance task

BY MIKE BUSCH

I GOT MY first car when I was 17 years old. It was a green 1947 Plymouth sedan, a hand-me-down from my parents that they used as an excuse to buy a brand-new 1961 Chrysler. I remember back then that gasoline was heavily leaded, engine oils were refined from dead dinosaurs, and tauto manufacturers recommended changing the oil every 2,000 miles. Nowadays, with unleaded gasoline and modern synthetic oils, the recommended interval for most vehicles is 7,500 to 15,000 miles. At typical highway speeds, 10,000 miles equates to about 200 hours of driving—much more for city driving.

In contrast, the recommended oil change interval for piston aircraft engines is a lot shorter. Continental and Lycoming recommend changing the oil every 25 to 50 hours. Rotax allows 100 hours if the engine is run on unleaded mogas and synthetic oil, but that drops to 50 hours if the engine is run on 100LL more than 30 percent of the time and drops to 25 hours if it's more than 50 percent.

Why so often?

Why do we change the oil so often? It's not because the oil breaks down in service and its lubricating qualities degrade. Conventional petroleum-based oils retain their lubricating properties for hundreds of hours, and synthetic oils retain them considerably longer.

The reason we change oil in our aircraft engines so often is because it gets contaminated after 25 to 50 hours in an aircraft engine. In fact, it gets downright filthy and nasty.

Compared with automotive engines, our piston aircraft engines permit a far greater quantity of combustion byproducts—carbon, sulfur, oxides of nitrogen, raw fuel, partially burned fuel, plus lots of steam (water)—to leak past the piston rings and contaminate the oil in the crankcase. This yucky stuff is collectively referred to as "blow-by," and it's corrosive and harmful when it builds up in the oil and comes in contact with expensive bottom-end engine parts like crankshafts and camshafts and lifters and gears.

Even worse, 100LL avgas is laced with the octane improver tetraethyl lead (TEL), which does nasty things when it blows by the rings and gets into the crankcase. Oil change intervals for cars doubled after mogas became unleaded, and the same thing is likely to happen once leaded avgas goes away.

Aircraft engines have much more blow-by than auto engines. Their cylinders and pistons are much larger, and their air-cooled design means that tolerances are much looser. They are filthy beasts, and they require frequent oil and oil filter changes to get rid of the blow-by contaminants before they build up to levels that are harmful to the engine's health.

Another reason to change the oil frequently is to replenish the oil's additive package. When sulfur and oxides of nitrogen mix with water, they form sulfuric acid and nitric acid. You might remember these dangerous corrosives from your high school chemistry class. You don't want them attacking your expensive engine parts. To prevent such acid attack, aviation oils are blended with acid neutralizer additives. These are alkaline substances that neutralize these acids, much as we might use baking soda to neutralize battery acid. These additives are consumed by the process of neutralizing acids, so it's imperative that we replenish them before they get used up. We do this by changing the oil.

How often?

In theory, we could do our oil changes on-condition by regularly sending oil samples to a lab and doing oil changes only when the oil analysis showed the oil was getting tired. Specifically, we'd change the oil either when the quantity of particulate matter in the oil became excessive or when the acid neutralizers were used up.

Some oil labs—notably Blackstone Labs (blackstone-labs.com)—routinely report on the quantity of "insolubles." This is a measure of how much particulate matter is found in the oil sample. If insolubles exceed 2 percent, then the oil is dirty and needs to be changed.

Total base number (TBN) reflects the amount of acid neutralizers in the oil sample. Fresh virgin aircraft engine oil typically has a TBN around 10. By the time the TBN decreases to two or three, the acid neutralizers are nearly used up and it would be wise to change the oil ASAP. Routine oil analysis reports usually won't include TBN, but most oil labs can include them if you ask.

Of course, most owners (including me) don't bother with such oil condition monitoring and simply change their oil at a conservative interval that's guaranteed to get the junk out and fresh additives in before anything untoward is likely to occur. I generally do oil changes at 50 hours or four calendar months, whichever comes first. This works well for my Continental TSIO-520-BB engines with their big 12-quart sumps. But not all engines can go this long between oil changes.

Consider the Continental IO-550-N and TSIO-550-K engines used in the Cirrus SR22 or the Continental TSIO-550-C in the Columbia 400 and Cessna Corvalis/TTx. These engines have a big displacement (550 cubic inches), and an unusually small oil sump capacity (eight quarts). Most operators keep their oil level between five and six quarts, since filling the sump to the eight-quart mark on the dipstick usually results in the top two quarts getting tossed out the engine breather in short order.

As you might imagine, asking just five or six quarts of oil to hold the blow-by from those six big cylinders in suspension is a tall order, resulting in considerably more rapid oil contamination than, say, an IO-550-B in a Beechcraft Bonanza whose oil capacity is a generous 12 quarts, typically run at nine to 10 quarts. The Bonanza is a good candidate for 50-hour oil changes, but the Cirrus SR22 and Cessna Corvalis would do better with an oil-change interval of 30 hours.

For your own engine, divide the displacement (in cubic inches) by the typical operating oil quantity (in quarts). Do this calculation and you'll find that the Bonanza engine scores 55 while the Cirrus/Corvalis engines score 91.67 and a Lycoming IO-360 run at six quarts scores 60. As a rule of thumb, if your engine scores over 70, you'd be wise to change the oil more often.

All this assumes that your engine uses a full-flow oil filter. Some older engines aren't equipped with a filter, just a pressure screen. This results in more rapid particulate contamination of the oil. So, you really need to change the oil every 25 hours or less to keep insolubles from getting out of control. Or, better yet, retrofit your engine with an STCed oil filter adapter.

This also assumes that you're running on 100LL. If you're using unleaded mogas or avgas, you should be able to go longer between oil changes. Once unleaded avgas becomes widely available and 100LL is phased out, it strikes me as likely that we'll be able to lengthen our oil-change intervals. That's certainly what happened when auto gasoline got the lead out.

Choosing oil and additives

Much has been written, stated, posted, and debated about the pros and cons of various types and brands of aircraft engine oil. We used to have more choices than we do now. Mobil AV 1 synthetic oil was withdrawn from the market in the mid-1990s in a hail of lawsuits involving engines that were ruined by accumulation of lead sludge. More recently, Exxon discontinued its Elite 20W-50 semi-synthetic multiviscosity oil in 2019. That leaves only two oil brands in the U.S. piston aircraft oil space: Phillips 66 and Shell.

Both Phillips and Shell offer a variety of mineral-based (i.e., all-petroleum) ashless dispersant (AD) oils, both mono- and multiviscosity, both with and without anti-wear additives. Shell also offers a semi-synthetic multivis anti-wear oil (Aeroshell 15W-50). Both companies also offer non-AD non-anti-wear oils that some prefer for new cylinder break-in.

Our piston aircraft engines—by virtue of their low rpm and loose dimensional clearances—have extremely modest lubrication requirements that can easily be satisfied by virtually any brand and type of aviation oil. A while back, Blackstone Labs performed an analysis that compared the wear metals generated by 571 Lycoming IO-360 engines using four types of oil: Aeroshell W100, Aeroshell 15W-50, Exxon Elite 20W-50, and Phillips X/C 20W-50. They found no significant difference in wear metals between the four types of oil.

50 HOURS
30 HOURS
SR22

Engines with large displacement and small oil capacity need more frequent oil changes.

But lubrication is not the only thing we need from our aircraft engine oil. We rely on oil to keep our engines clean inside by capturing all that filthy blow-by and wear metal particles and holding them in suspension so they can be drained out at the next oil change rather than forming sludge that clogs oil passages and piston rings. This is primarily the job of ashless dispersants in AD oil, engineered molecules with polar heads that stick to contaminants and long hydrocarbon tails that keep them suspended in the oil. As with acid neutralizers, these ashless dispersants get

used up as the oil becomes contaminated with particulates, so regular oil changes are needed to ensure the engine's internal cleanliness.

Lead contaminants caused by leaded fuel are a special case. Synthetic oils such as polyalphaolefin (PAO) cannot hold them in suspension very well, creating vulnerability to buildup of nasty lead sludge. Mobil found this out the hard way with the Mobil AV 1 debacle. Shell still offers its semi-synthetic Aeroshell 15W-50 that uses a 50-50 mixture of mineral oil and PAO as sort of a compromise between the better lubricity and longevity of PAO and the better lead dispersant ability of petroleum. Since semi-synthetics have significantly less lead-dispersing capability than all-mineral oils, you might want to avoid them if you're flying behind an engine with a high displacement-to-oil-capacity ratio such as the Cirrus/Corvalis engines discussed earlier. Once we're able to run these engines on unleaded fuel, semi-synthetics and even full synthetics may well become the oils of choice.

There are times when moving metal parts in our engines rub against one another without the benefit of an adequate oil film to keep them hydrodynamically separated. Notably, this happens at every engine start, especially "dry starts" after the engine has been idle awhile. Metal-to-metal contact can also occur between compression rings and cylinder walls near the top center when the piston slows to a stop and reverses direction. This is where anti-wear (also known as anti-scuff) additives come in. These are typically phosphates—such as tricresyl phosphate (TCP) and triphenyl phosphate (TPP)—that chemically inhibit micro-welds between the contacting surfaces that are responsible for friction and wear. These friction modifier additives are important for all engines, but especially ones (like mine) that fly irregularly and sit unflown a lot.

We also rely on oil to protect the expensive steel parts of our engines from rusting during periods of disuse, especially if the aircraft lives in an area of moderate or high environmental corrosion risk (e.g., near the coast), and especially if it lives outdoors. If cold-weather starts are not an issue, I prefer mono-viscosity oil like Aeroshell W100 or Phillips Type A because they're thick and gooey at room temperature and strip off parts more slowly. Some oils and aftermarket additives contain anti-rust additives that provide additional corrosion protection.

Some recommendations

For my own Cessna 310 based on the central coast of California, I use Aeroshell W100 mono-viscosity AD oil to which I add ASL CamGuard, a very effective combination of anti-rust and anti-wear additives. My airplane flies irregularly, sits unflown a lot, and lives in a hangar just a few miles from the Pacific Ocean. The combination of mono-vis AD oil and CamGuard has provided me with sensational engine longevity. For my clients who deal with cold-weather starts where multi-viscosity oil is needed, my first-choice recommendation is Phillips X/C 20W-50 multi-vis AD oil with CamGuard added for anti-corrosion and anti-wear protection.

If you prefer not to use CamGuard, I recommend oils like Aeroshell W100 Plus or Phillips Victory 20W-50 that are preblended with anti-wear additives.

Now please excuse me, I need to drive to my hangar and change my oil. ■

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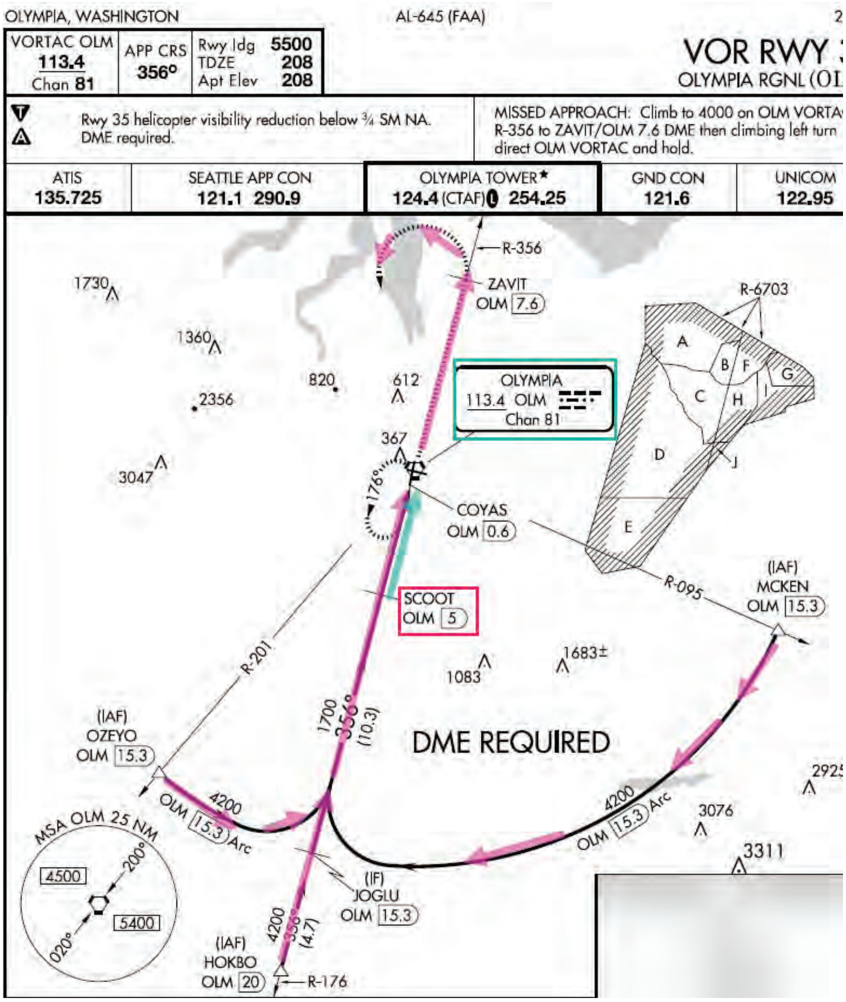
OLYMPIA, WASHINGTON
AL-645 (FAA)
VORTAC OLM
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356°
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TDZE 208
Apt Elev 208
VOR RWY
OLYMPIA RGNL (OL
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DME required.
MISSED APPROACH: Climb to 4000 on OLM VORTAC
R-356 to ZAVIT/OLM 7.6 DME then climbing left turn
direct OLM VORTAC and hold.
ATIS 135.725
SEATTLE APP CON 121.1 290.9
OLYMPIA TOWER★ 124.4 (CTAF) 254.25
GND CON 121.6
UNICOM 122.95
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4200
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R-176

You can use GPS as an alternate means of navigation on the VOR Runway 35 approach at Olympia, Washington (OLM), even along the final approach segment, if you can simultaneously monitor the charted VOR course.

INSTRUMENT TIP /

GPS: substitute or alternate?

An important distinction, especially during an approach

BY BRUCE WILLIAMS

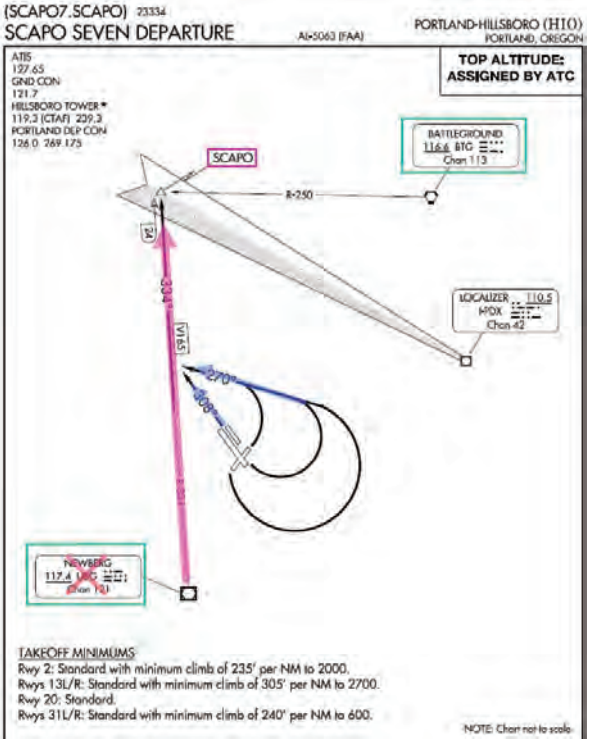
TODAY MOST IFR pilots use GPS as a primary source of navigation, whether they're flying a departure, airway, or arrival defined by VORs; or segments of approaches based on navaids or that require DME or ADF. In these scenarios, we often speak of "substituting" GPS for ground-based navaids, and we understand the general sense of that word. But like many terms in aviation, "substitute for" has a specific meaning, and when operating IFR, it's important to understand how that definition relates to its counterpart phrase, "alternate means of navigation."

Current guidance about this topic is mainly in *Aeronautical Information Manual,* paragraph 1–2–3: Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes, and its counterpart, AC 90-108. AIM 1-2-3 explains how you can use a "suitable RNAV system" (which in general aviation means an IFR-approved GPS) in various situations. You might, for example, prefer to follow GPS guidance when flying a VOR-based airway. That's using GPS as an "alternate means." But if you rely on GPS when ground-based navaids are out of service or if you don't have equipment like DME or ADF in your panel, you're "substituting" GPS for those navaids. The practical distinction between "alternate means" and "substitution" is best understood through specific examples.

Suppose you want to fly a VOR-based airway, such as V2, which roughly parallels I-90 from Seattle to La Crosse, Wisconsin. If all the VORs enroute are working and you have a VOR receiver in the panel (that you've checked per FAR 91.171), you can use an IFR-approved GPS as an alternate means of navigation to stay in your lane the entire way. As long as the GPS signal is valid, you don't even need to monitor the VORs. However, if ground stations that define segments of the airways are out of service, using GPS to fly those legs is an example of substituting RNAV equipment for a navaid, and your preflight briefing may include a notam requiring you to use GPS along those portions of the route.

The key distinction between "alternate means" and "substitute for" becomes more important when you fly IFR procedures based on navaids. For example, notes in AIM 1-2-3 explain that: "Pilots may not substitute for the NAVAID (for example, a VOR or NDB) providing lateral guidance for the final approach segment." That means you can't fly a VOR or NDB approach using only GPS for guidance, as when the navaid listed in the procedure title is out of service or if you don't have the appropriate receiver in your panel.

But the following note explains that: "Use of a suitable RNAV system as [an alternate] means to navigate on the final approach segment…based on a VOR, TACAN or NDB signal, is allowable." However, the AIM continues, "The underlying NAVAID must be


(SCAPO7.SCAPO) 23334
SCAPO SEVEN DEPARTURE
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GND CON
121.7
HILLSBORO TOWER*
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PORTLAND DEP CON
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116.6 BTG
Chan 113
R-250
24
334°
V165
LOCALIZER 110.5
I-POX
Chan 42
270°
308°
NEWBERG
117.4 UBG
Chan 121

TAKEOFF MINIMUMS
Rwy 2: Standard with minimum climb of 235' per NM to 2000.
Rwys 13L/R: Standard with minimum climb of 305' per NM to 2700.
Rwy 20: Standard.
Rwys 31L/R: Standard with minimum climb of 240' per NM to 600.

NOTE: Chart not to scale

The SCAPO SEVEN departure is a conventional departure procedure that requires only a VOR receiver to fly. But because of a VOR outage, the departure procedure is authorized by notam only for aircraft with an IFR-approved GPS.

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operational and the NAVAID monitored for final segment course alignment."

Sometimes, the FAA requires you to substitute GPS for a navaid. For example, the SCAPO SEVEN departure at Hillsboro, Oregon (HIO), requires only a VOR receiver. But when the VOR it's based on isn't working, a notam declares that the DP is "NA except for acft equipped with suitable RNAV system with GPS. UBG VOR out of service." You can fly that procedure with GPS by creating and then intercepting the leg from UBG to SCAPO. (See "Resolving a Database Dilemma," August 2024 *AOPA Pilot*.)

One important exception applies to using GPS as either a substitute or alternate means of navigation. Neither option is approved when flying a final approach segment defined by a localizer. From at least the final approach fix to the missed approach point of an ILS or LOC approach, you must display and use "green needles" to track the funnel-like localizer course, using GPS only to identify fixes along final and as a substitute for DME or ADF if required. ■

Bruce Williams is a CFI. Find him at youtube.com/@BruceAirFlying and bruceair.wordpress.com

Advisory Circular explained /

If the FAA-speak on this topic seems daunting, don't despair. The FAA should release AC 90-119, "Performance-Based Navigation Operations" in 2025 or 2026. That AC consolidates and clarifies guidance about using GPS that's currently scattered among several references. If the final version of AC 90-119 reflects drafts released for comment in 2021 and 2023, it will provide clearer definitions of *alternate* and *substitute* means of navigation:

11.1.1.1 Alternate Means of Navigation. The pilot's use of a suitable navigation system to navigate on a conventional route or procedure without monitoring the operational navaid(s) defining the route or procedure. "Alternate means" applies to a situation where the pilot has options, or a choice, and uses the suitable navigation system primarily for convenience.

11.1.1.2 Substitute Means of Navigation. The pilot's use of a suitable navigation system to navigate on a conventional route or procedure in an aircraft with inoperative or not-installed conventional navigation equipment and/or when conventional navaids are out of service. "Substitution" applies to a situation where the navaid or the aircraft equipment are inoperative or unavailable (i.e., the pilot cannot use or monitor the conventional navaid).

Check back in a future issue for a detailed review of AC 90-119 when it is published.

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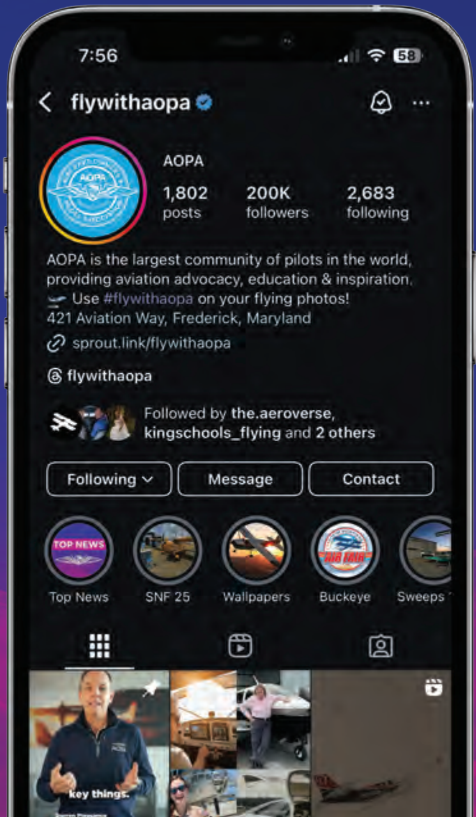
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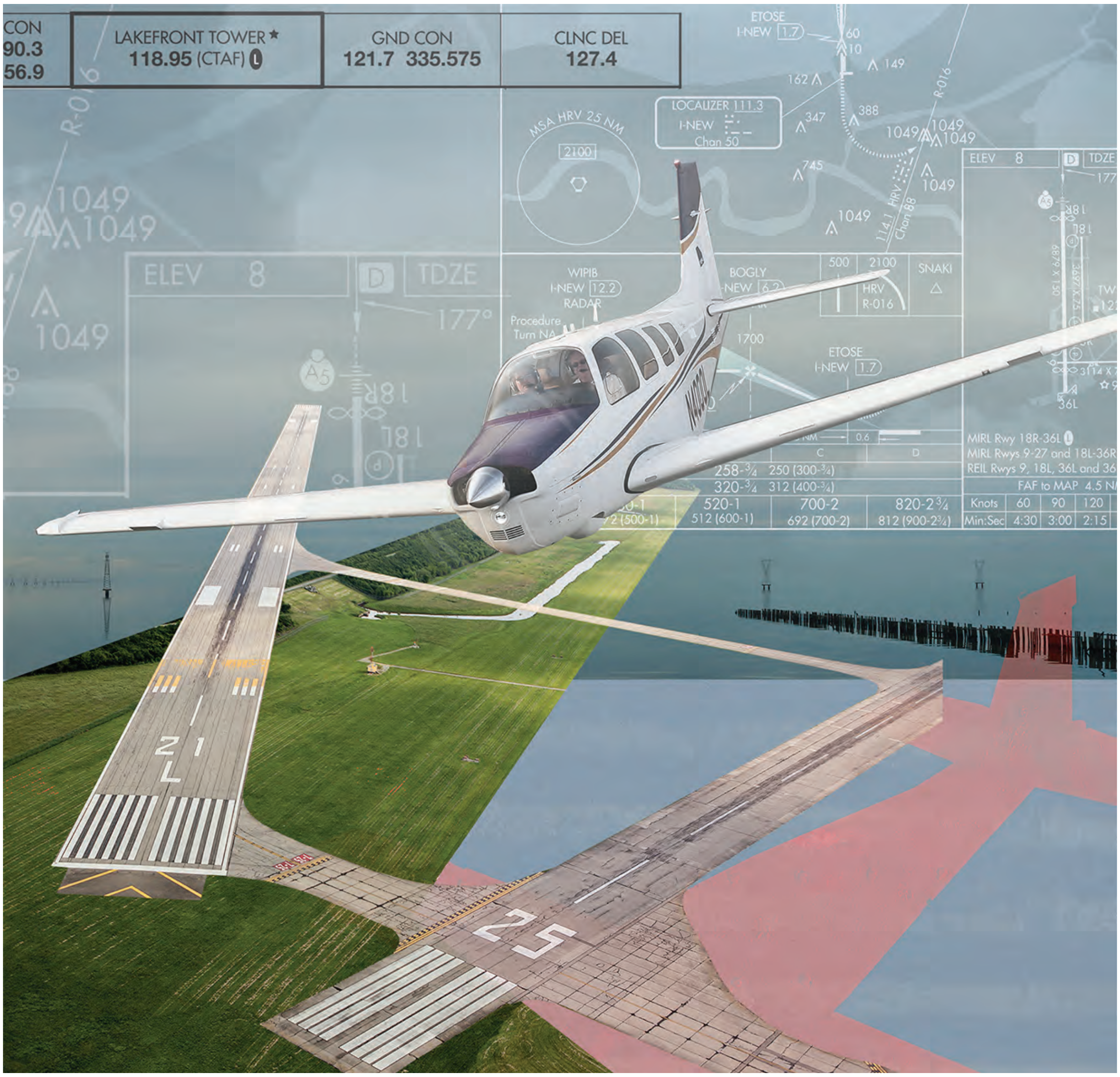
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I-NEW 12.2
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ETOSE
I-NEW 1.7
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MIRL Rwys 9-27 and 18L-36R
REIL Rwys 9, 18L, 36L and 36
FAF to MAP 4.5 NM
Knots 60 90 120
Min:Sec 4:30 3:00 2:15
258-¾ 250 (300-¾)
320-¾ 312 (400-¾)
520-1 512 (600-1)
700-2 692 (700-2)
820-2¾ 812 (900-2¾)

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IFR tools for VFR flights

BY CATHERINE CAVAGNARO

"NOVEMBER ONE-KILO-YANKEE, LAKEFRONT Airport one o'clock and one-two miles, report when you have that in sight." Last summer, I took my Beechcraft Bonanza, *Niky*, down to New Orleans for a few days of fun, great music, and Cajun cuisine. Except for a few deviations around summertime cells, the flight was smooth, and Lakefront Airport (NEW) was reporting visual conditions. But a couple minutes later, ATC prompted again, "Lakefront Airport one o'clock, eight miles, advise in sight." I knew where the airport *should* be, but searching through a hazy sky before a setting sun made the task of seeing it especially challenging. Still, I felt silly. And I confess that my response, "Lakefront in sight," stretched the truth a bit.

I flew to New Orleans on an instrument flight plan, but given the reported weather conditions, I accepted a visual approach clearance, as I felt confident that I'd see the airport. Fortunately, I loaded the ILS approach to Runway 18R anyway which painted an approach course that directed me toward the correct runway. I turned the airplane toward the west to intercept the lateral guidance before BOGLY and put *Niky* in the landing configuration for the last part of the approach. My visual clearance allowed me to choose a steeper descent profile. Doing so guaranteed that I could still glide to the airport should *Niky* suffer an engine anomaly as I approached over Lake Pontchartrain. Blending IFR and VFR procedures can offer the best of both worlds.

IFR procedures are designed to guide pilots through the departure, enroute and approach phases with comfortable terrain and obstacle clearance since visual references cannot be used in instrument meteorological conditions. But using IFR procedures can also help VFR pilots form a safe plan from takeoff to touchdown.

While it may be tempting to avoid terrain using only visual cues, our senses can deceive us.

I recently planned a flight from Lewiston, Idaho (LWS), to Missoula, Montana (MSO), on a warm summer day. The departure airport sits at 1,442 feet msl but is nestled among terrain that pushes the surrounding maximum elevation figures (MEFs) on the sectional chart to over 7,000 feet msl. MEFs can provide precious obstacle and terrain clearance, and IFR routing provides a safe altitude for crossing the impressive mountains between Lewiston and Missoula. The highest minimum enroute altitude (MEA) along V187 that connects the Nez Perce VOR (MQG) and the Missoula VOR (MSO) is 13,000 feet. Although RNAV-equipped aircraft like *Niky* can take advantage of the lower 9,800-foot RNAV/GPS MEA, I chose to overfly the mountains above the 13,000-foot MEA for increased options should an engine anomaly occur. And I always bring supplemental oxygen for flight above 9,000 feet.

With a route chosen, the best way to climb from Lewiston's 1,442 feet up to 13,500 feet along V187 and over the mountains to the east wasn't immediately clear. Fortunately, the POTOR 2 departure procedure at LWS provided a recipe for safe departure and specified the required performance to ensure *Niky* was up to the mission.

Winds from the west meant that using the longer Runway 26 made sense. The required climb gradient is 300 feet per nautical mile to 4,700 feet msl. That may not seem like much, but considering that I like to use a cruise climb of 120 KIAS, which corresponded to 132 KTAS on that day, *Niky* would need a 660-foot-per-minute climb rate. Although the day was warm, with just two people and bags in the airplane, the POH predicted a robust 1,100 foot-per minute climb rate. And the westerly winds were sure to improve the climb gradient while heading west.

After takeoff, the plan was to turn to a heading of 200 degrees to intercept V187 to reach POTOR, 12 miles from the airport. With the required climb gradient, *Niky* should be above 5,000 feet by the time we reached POTOR. Turning east along V187 ensured the airplane would be well above the initial RNAV MEA of 6,100 feet when passing MQG VOR.

It was finally time to consider the transition from the enroute phase to a landing at Missoula. Without an arrival procedure into MSO, a carefully chosen instrument approach procedure can provide courses and altitudes toward a VFR pattern entry. For example, with southerly winds, descending to 12,000 feet, then to 10,500 feet along the MSO 25 DME arc, and then turning inbound and descending to pattern altitude along the localizer course (while staying above the vertical guidance) to Runway 12 provided a clear, safe path to enter the pattern at Missoula.

While this flight planning might seem like overkill for a flight in VMC, waiting to figure out the plan in the air can end badly. In July 2021, two pilots departed Aspen, Colorado, (ASE) for Des Moines, Iowa, (DSM) in a normally aspirated Beechcraft Bonanza. The density altitude that evening was 10,500 feet. When the controller issued an IFR clearance including the LINDZ departure and instructions to climb to 16,000 feet and expect 17,000 feet shortly after departure, the pilots chose to refuse the clearance and avoid terrain visually. When the controller queried them on their route, one pilot responded, "We're going to make that decision once we take off, actually, and once we see what's going on." After two circles over the airport to gain what they deemed a sufficient altitude to cross terrain to the east, they pointed the Bonanza between ridges toward the east-southeast. As the terrain below them rose faster than their climb rate, the clearance between the ridges narrowed. Ultimately, their only option was to perform a 180-degree canyon turn, but they made that decision too late; both pilots perished when the aircraft impacted terrain. For an excellent review of this accident, see the AOPA Air Safety Institute's *Accident Case Study: Into Thin Air*. While it may be tempting to avoid terrain using only visual cues, our senses can deceive us. It's better to form a plan and verify that it works during the preflight preparation on the ground.

Using IFR tools for flying in visual conditions, of course, necessitates understanding how to use them safely and effectively. PilotWorkshops offers a course called "IFR Skills for VFR Flying" in which accomplished instructor Ryan Koch presents illustrative scenarios that offer more detailed and nuanced advice than can fit here. It's a great place to start, and pilots can use them as a springboard for discussions with an experienced instrument instructor.

My hope is that incorporating IFR tools into VFR flights will encourage pilots to pursue an instrument rating or perhaps knock the rust off their instrument skills. The resources and techniques prove valuable for any cross-country flight. ■

Catherine Cavagnaro teaches aerobatics at UOS and is the Gaston Swindell Bruton Professor of Mathematics at Sewanee: The University of the South.

▶ **airsafetyinstitute.org/ACS/IntoThinAir**

ALEX WILLIAMSON

NEVER AGAIN /

Rushing to get airborne

When a unique opportunity makes the storm look better than it is

BY ROBERT ODGERS

LOOKING BACK AT my logbook, it was September 11, 1981, and the only note I have down from this particular flight said simply, "had to wait out a severe thunderstorm," which doesn't really do the story justice.

Over my entire aviation career there were three times I remember having to deal with landing gear problems, first instructing in T–38s in the U.S. Air Force, the third time while flight testing the Bombardier Global Express, but this second flight was by far the most memorable.

I was an engineer and pilot for what was then the Pawnee Division of Cessna Aircraft, located adjacent to McConnell Air Force Base (IAB) in Wichita, Kansas. At that time, the production line for single-engine Cessnas was still at the Pawnee plant. Part of my job included service testing modifications to existing aircraft models or new models early in their production. These tests typically involved cross-country flights just to put time on the aircraft to see if any issues needed to be addressed early in the production cycle.

One of the airplanes I service tested was the then-newest Cessna light twin, the T303 Crusader, serial no. 0001, which was built at the Pawnee plant. Prior to service testing the T303, Cessna had modified a 310 by installing the turbocharged Continental engines that would be used on the T303. I flew several hours in the 310 engine testbed while the prototype T303 was being built and flight tested. Once the T303 was certified, I jumped at the chance to service test the first production T303.

I was scheduled for a late afternoon flight in the T303. I didn't bother to check the weather with Flight Service even though I knew from my car radio that a line of thunderstorms had started to develop northwest of Wichita. As I drove over to the Pawnee Delivery Center, I could see the sky to the northwest starting to turn dark, but I convinced myself I could complete a short flight before the storms became a problem and proceeded to takeoff to the north from the Pawnee plant delivery center runway at Cessna Aircraft Field (CEA).

Climbing out after takeoff, I could see the sky to the northwest was starting to turn uglier with a gust front kicking up dust. I raised the gear and started a turn to the east when I was buffeted by those gusty winds caused by the outflow from that line of thunderstorms. I now realized that the thunderstorms were closer and moving faster than I had anticipated. I made a quick decision to reenter the pattern and get back on the ground as soon as possible.

After turning back to a downwind, I selected gear down, and nothing happened—Murphy's Law comes to mind. I did not get three green lights or any other gear down indication, such as external noise or increased drag. I cycled the gear handle and still could not get the lights. The Cessna Aircraft Field runway is non-towered, so there was no tower from which someone might do a visual check of my gear status, and the sky was getting darker by the minute.

I decided it would be safer to put distance between me and that line of

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thunderstorms before dealing with the gear problem. I turned to the southeast, in a direction opposite the thunderstorms, with the hope that I could outrun them and eventually get the gear down. I remember thinking I could fly south into Oklahoma, if necessary, as I learned to fly there and knew the airports. My next idea was to continue in the direction of Strother Field (WLD), about 30 nautical miles southeast of Wichita. Cessna had a plant there, and I could get the T303 hangared.

Now that I had a plan and was hopefully outrunning the storm, I cycled the gear handle again and used the emergency extension and was able to get three green. What a relief that I wasn't going to damage the first production T303 by having to land gear up.

Now it was just a race to stay ahead of the storm and get the airplane on the ground. I landed at Strother just in time to get the T303 safely in Cessna's hangar before the storms hit. As it turns out, the storms spawned multiple tornados, damaging wind, and hail across the Wichita area. After an hour or so, the line of storms passed through the Strother area, and I flew the T303 back to the Pawnee plant, electing to leave the gear down en route.

I later learned that my wife had to take shelter with our 1-year-old son, Adam, and our Irish Setter in the basement of our home because of the tornados and high winds. She knew I had gone flying but had no idea what had happened to me, as this was well before cellphones made communication easy.

I don't remember finding out what caused the gear malfunction, but I did follow up with additional successful flights in the T303. Looking back, it was the reverse of get-home-itis, in that I was rushing to get airborne to get experience in Cessna's newest aircraft. Having flown in the Oklahoma and Kansas areas for many years, I was well aware of thunderstorms and the necessity to avoid them and would normally not attempt a flight if thunderstorms were forecast. But the opportunity to fly the T303 clouded (pun intended) my judgment. I should have gotten a weather briefing and then made the correct choice to stay on the ground and sit out the pending storm. ■ *Robert Odgers is a former U.S. Air Force T–38 instructor pilot and retired Honeywell test pilot. With more than 7,000 hours logged, he has been flying for 60 years.*

FLY WITH AOPA

DID YOU KNOW?

27 The number of aircraft AOPA has given away in its sweepstakes since 1993.

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MEMBERSHIP /

Our sweepstakes story

How we choose the winner

IT'S THE MOST highly anticipated event in AOPA's calendar year: the awarding of the annual sweepstakes aircraft, an airplane that over a period of time we have renovated, refurbished, or flown for the enjoyment of our members reading and watching the transformation or excitement unfold. On page 30, you can find out who won the 2025 AOPA Sweepstakes Cessna 182 and check out the next sweepstakes aircraft we'll give away in 2026—an Aviat A–1C-200 Husky. But the most-asked question about our sweepstakes is: How do we choose the winner?

AOPA contracts with Ventura Associates International, LLC, an independent sweepstakes administrator and judging organization, to create and implement the AOPA Sweepstakes official rules. According to the rules, if you are an AOPA member as of 11:59 p.m. Eastern time on June 15, 2026, you are automatically entered in the drawing to win the sweepstakes Husky. AOPA members enrolled in automatic renewal, and AOPA life members receive five additional entries.

After the sweepstakes entry period ends, the rules state AOPA must wait several weeks to receive any mailed entries. AOPA then sends Ventura a list of members who were automatically entered along with individuals who entered using an alternate method.

Ventura conducts a random drawing from all eligible entries received during the entry period. The winner must be a legal resident of one of the 50 United States (or District of Columbia), Canada (excluding Quebec), Guam, Puerto Rico, or the U.S. Virgin Islands, age 18 years or older at date of entry, and certificated by the FAA as a student, recreational, sport, private, commercial, or airline transport pilot as of June 15, 2026.

▶ **aopa.org/sweeps**

The early years /

The first giveaway, in 1956, was broadcast live on CBS from a hangar at Washington National Airport (DCA) with host and AOPA charter member Arthur Godfrey acting as emcee. Two aircraft were given away: an Aeronca Champion "Sky-Trac" tricycle-gear Champ and a Piper Tri-Pacer. The aircraft were given away as prizes in a contest to create the best reason to join AOPA, then a 70,000-member organization. With no standalone membership magazine at the time, contestants got their entry forms from *AOPA Pilot* inserts in *Flying* magazine.

Sweepstakes history /

The 27 sweepstakes airplanes AOPA has given away include 11 Cessnas, six Pipers, two Beechcraft, and one each from Aviat, Cirrus, Commander, Grumman, Mooney, Remos, Van's, and Waco. After we award the airplane to the winner, its fate is out of our control. AOPA does not put any restrictions on how long the winner must keep the airplane or who can (or cannot) buy it. Most AOPA members who win a sweepstakes airplane eventually sell it (see "Where Are They Now," July 2024 *AOPA Pilot*).

ASI SAFETY TIPS /

The possibilities

MOSAIC offers many promises; will it deliver?

BY PILAR WOLFSTELLER

THE FAA'S MODERNIZATION of Special Airworthiness Certificates (MOSAIC) final rule will open up significant possibilities for light sport aircraft and the sport pilot community (see "Action," p. 8). Pilots who are certified under those 20-year-old rules can now look forward to a much broader scope and expanded opportunities to fly, and more aircraft will qualify in the category.

This update, which has been a decade in the making, and what some people call a "wholesale transformation" of the sector, was mostly positive. But with these opportunities comes expanded risk and responsibility, and the safety issues that arise as a result must be addressed.

The light sport rules and sport pilot certificate created in 2004 were a pathway to make it easier to allow pilots to fly simpler, lighter aircraft, day-only VFR, with fewer passengers, shorter distances, and without a medical certificate. Sport pilots medically "self-certify" with a driver's license and don't have to go through the FAA certification process, removing a significant barrier to aviation for many.

The list of aircraft these pilots can fly is long, but the previous rules placed limits on powerplant, weight, and speed. MOSAIC radically redefines the light sport aircraft category and raises the size and performance capabilities of airplanes that can be flown by sport pilots. The rule now allows alternative propulsion systems such as electric and hybrid powertrains to be certified as light sport aircraft.

While the industry has broadly welcomed the changes, some have warned that the new allowances could pose issues for pilots not accustomed to flying such powerful and fast aircraft. With eligible aircraft no longer classified by weight but rather by stall speed, the sport pilot certificate, with its reduced training requirement (20 hours of time versus 40 hours for a full private certificate), may not adequately prepare those pilots to handle the complexity of the new technologies, advanced systems, or higher speeds.

The MOSAIC threshold of 59 knots clean stall speed will allow the sport pilot to fly an aircraft like a Cessna 172 or a Piper Cherokee. In fact, the vast majority of single-engine piston models will now qualify to be flown by sport pilots. Now that the new light sport aircraft rules are set, manufacturers are poised to bring even more new and modern models to market.

Transitioning to Other Airplanes offers advice on what you can expect when you're moving from something familiar to something new.

▶ **airsafetyinstitute.org/courses/transitioning**

After we celebrate, it's important that sport pilots approach the new possibilities in a smart and sensible way. That includes getting additional training and, for some operations, an additional endorsement. Sport pilots will also continue to self-manage their medical fitness to fly. While the option to not go through an FAA medical check is a relief for some, it saddles the fit-to-fly burden squarely on the pilot.

Approaching this expansion of one's sport pilot privileges should be treated just like transitioning to any other new-to-you aircraft; the AOPA Air Safety Institute has dedicated an entire course. It will take some self-study and one-on-one time with an instructor to become comfortable with the higher velocity and the handling of the heavier, more powerful equipment.

The challenges—apart from speed and weight—also include learning different flows from different checklists in different environments on different systems and with different configurations. Night flying is now possible, as well as some commercial applications, such as aerial inspections, photography, and agricultural observation. MOSAIC will require an endorsement for some of these activities and a third class medical or BasicMed is required for night flying.

A great way to supplement your training, at a lower cost, is to fly in a simulator first, so you can get a feel for the new aircraft. According to the new rules, 2.5 hours of sim time can be credited toward the aeronautical experience requirements of a sport pilot certificate. Be sure to schedule recurrent training with an instructor within a few months, to ensure that you're still doing everything right.

The new MOSAIC rules represent a marked and noteworthy shift in pilot training as well as in overall access to aviation. New, modern aircraft with lower operating and maintenance costs promise to attract more people into the sport pilot fold and allow those who are already here to spread their wings even more. What's not to like about that? ▪ *pilar.wolfsteller@aopa.org*

SOCIAL MEDIA /

Behind the scenes

THE AOPA MEDIA team produces the magazine stories you read here, videos to accompany those stories, fantastic photography, reels, and long-form videos on our Facebook, Instagram, and TikTok accounts. ■

GUNFIGHTER

Flying with the president
AOPA President Darren Pleasance got in some formation flying while at EAA AirVenture with Larry "Lumpy" Lumpkin in *Gunfighter.*
@flywithaopapres

From the pages of *AOPA Pilot*
After 104 years of service, the 104th Fighter Squadron will be divested at the end of September 2025 with its airplanes either being reassigned to other A–10 squadrons, mothballed at Davis-Monthan, or sent to museums.
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Scenes from OSH
The serenity of the EAA seaplane base is a stark contrast to the crowded and action-packed grounds at EAA AirVenture.
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Senior Photographer David Tulis flies right seat in the Cirrus SR20 piloted by singer/songwriter Drew Holcomb on their way to a music festival on the Mississippi.
@sumwalk736

Director of Photography Chris Rose captures the Risen Aircraft in a beautiful setting under the Wasatch Mountains near Nephi, Utah.
@michelle_walker

How hot is Arkansas in the summer? Hot enough to jump into a creek fully clothed—Senior Photographer David Tulis photographed Features Editor Alicia Herron and Videographer Bri Cabassa in the Mulberry River.
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LEGALLY SPEAKING /

Permission to land

The rules behind that magenta 'R' in a circle

BY PATRICK BROOKE
AOPA Legal Services

PILOTS ARE FAMILIAR with towered and nontowered public-use airports, but less so with private-use airports—airports that are not open to the public to land without prior approval. They are governed by legal frameworks that pilots and landowners alike should understand. These airports come with responsibilities for both the owner and the visiting pilot.

Many private-use airports are identified on sectional charts by a magenta circle with an "R." Access is at the airport owner's discretion. Generally speaking, you must get permission in advance. Additionally, the owner may require you to receive a safety briefing or sign a waiver before granting access. Owners can establish use conditions such as no stop-and-goes, daylight-only operations, or aircraft type limitations, or decline your use altogether.

With that control comes concern about liability. Fortunately, recreational use statutes in all 50 states may offer landowners some legal protection when their land is used for noncommercial, recreational purposes. Many states explicitly include aviation in their definitions of covered recreational activities. These laws generally shield the landowner from liability unless they act with gross negligence or willful misconduct. If you land with permission, or even in an emergency, the responsibility for any damage usually rests with the pilot, not the landowner.

But recreational use statute protections vary by state, and they aren't a substitute for aviation liability insurance, which remains a smart choice for airstrip owners. Charging landing fees or engaging in other commercial activity may void your statutory protections. Similarly, poorly maintained premises or known hazards not disclosed to visitors can still create liability. It is advisable to have a properly written policy to address gaps and offer added protection. If you have not reviewed your insurance lately, check your policy to ensure your operations are covered, especially if the airport is not charted

Owners can chart their airstrip with the FAA by submitting Form 7480-1. While not granting public status, it ensures visibility in aeronautical publications and may assist in airspace coordination and local permitting. But access is a privilege, not a right. Always check in advance, follow any published procedures, and treat the property with care and respect.

Ultimately, private airfields enhance the freedom and flexibility of GA. When thoughtfully managed and respectfully used, they benefit not only the owner but the broader flying community. Whether you're building one or visiting one, understanding the legal and operational framework ensures these valuable assets stay safe, sustainable, and available for years to come. ■ *Patrick Brooke is an in-house attorney with AOPA's Legal Services Plan. He is a private pilot and a former panel attorney with the Pilot Protection Services program.*

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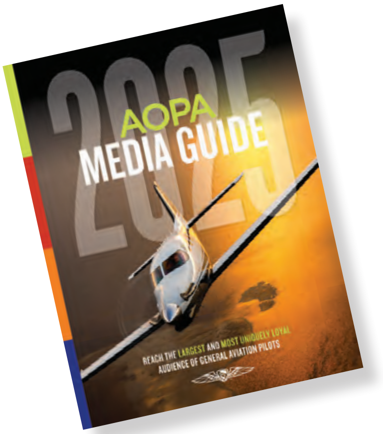
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Stadium TFRs

BY RODNEY MARTZ

WITH THE START of football season it's time to review your flight plan, especially if you're flying near stadiums. Think of the NFL as a Class B airspace: You need to "talk and squawk" and avoid the 3-nautical-mile no-fly zone up to 3,000 feet agl during games. Normally, this isn't an issue for IFR or VFR pilots following proper procedures. But what about college football? There are 261 NCAA Division I football schools, yet only 43 stadiums have 30,000-plus seats, which is the minimum for triggering a TFR. So, you may not always be near a Class B airspace, but the need to communicate and stay aware remains just as critical. The AOPA Pilot Information Center has heard several recurring issues over the years:

Fumbled snap: An IFR pilot cancelled early, maybe the runway was in sight, but the aircraft strayed into the TFR. Not cleared.

Dropped handoff: A VFR pilot on flight following who expected continued radar services was dropped off early and didn't realize they were still responsible for avoiding the TFR.

Blown coverage: Pilots caught off guard by banner tow aircraft, jumpers, or formation flights near stadiums.

Home field advantage: Class D airspace may not have the ATC-radar confirmation that you're used to in Class B or C airspace, but surely, upon any claim of violation, ADS-B history will be used to confirm.

Smaller stadiums: Even under-30,000-seat venues fall under FAA rules for "open-air assembly of persons" and per FAR 91.119, you must stay 1,000 feet agl within 2,000 feet horizontal, unless you're taking off or landing. Bottom line: Stadium TFR is a standing rule. Contact AOPA's Pilot Information Center at 800-USA-AOPA (872-2672), pilotassist@aopa.org or pic.aopa.org for more information. ▪ *Rodney Martz is a senior aviation technical specialist with the AOPA Pilot Information Center.*

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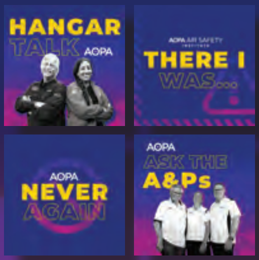

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Michael 'Doc' Dougherty

Flying the Goodyear blimp

BY SYLVIA HORNE

GOODYEAR TIRES

LOGBOOK /

WHO / Michael 'Doc' Dougherty

HOURS / 7,500 total; 4,500 in airships

RATINGS/ Airline transport pilot (ATP), airplane multiengine, EMB-145 type rating with commercial privileges—lighter-than-air airship (highest LTA rating the FAA issues), and airplane single-engine land; CFI, MEI, CFII-ME, AGI; FAA designated pilot examiner/specialty pilot examiner—lighter-than-air airship

EXTRA / Because of the pronunciation of his last name, all the men in Dougherty's family are called "Doc," but like any proper call sign, it was also assigned to him by co-workers, because of his extensive knowledge of airships, and it's what Dougherty is known as by Goodyear senior leadership.

MANY WOULD SAY Michael "Doc" Dougherty, Goodyear Tire and Rubber Company's chief pilot of Goodyear Airships, has the coolest job in the world. He spends a good part of his working life flying a Goodyear blimp.

Dougherty started out studying engineering at the University of Akron with the aim of following in his father's footsteps in the construction business. But somehow, he wasn't very excited about the prospect, so when a friend told him about an aviation program at Kent State University, he decided to give it a try and fell in love with flying. He earned his private pilot certificate in August 2001, and despite the events of 9/11 impacting the industry, decided to stick with it and received the ratings that would qualify him to fly for the airlines. In the process, he helped shape Kent State's professional pilot program and when the industry picked up again in 2004, he landed the coveted job as a pilot for an airline, quickly gained seniority, and enjoyed commercial flying for several years.

At the same time Dougherty had a side business running a lawn company and found himself cutting grass around Goodyear's hangar at Wingfoot Lake. He got to know the pilots and before long he left the airlines, trained to fly the GZ-20, and started to fly for Goodyear Airship Operations.

When maintaining the original blimps became more and more inefficient, Goodyear switched from the nonrigid airships to semi-rigid airships manufactured by Zeppelin NT in Friedrichshafen, Germany. "The only thing those two types have in common is the helium inside," Dougherty said. He spent one year in Friedrichshafen, learning to fly the semi-rigid airship and to train other pilots in it.

Dougherty's longest cross-country trip took him from New York to Los Angeles, and he enjoys the country going by at a slow pace. "Flying the blimp is unique, people are excited to see us, and we get to do a lot of cool stuff," he said. "But what most people don't realize is the fact that it doesn't take just the pilot to make that happen. We have up to 20 people on every team, from DOT truck drivers, to broadcast technicians [for game coverage], maintenance crews. You're on the road for weeks or months at a time, you become family."

Circling over stadiums, covering ball and golf games all over the country is a different kind of flying and far from boring. "We actually rotate crews and pilots by what they enjoy watching. Some are baseball fans, some like golf and we schedule them accordingly." On the fourth of July, Dougherty was hovering 500 feet over the Hudson River, watching the fireworks. Cool job. ▪ *sylvia.horne@aopa.org*

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